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Should the Industry Quote List Prices on a Standardized Basis

by Don Blanchard
Editor, Automotive Industries

Inclusion by all makers of usual equipment, advertising and dealer handling charges in the list, would make prices competitive and end present confusion, uncertainty and discord

NOW that differences over delivered prices appear to be approaching settlement, it is perhaps as good a time as any for the industry to give some calm and considered study to its price policies. Moreover, with NRA in the picture, it is now possible to do things to rationalize these prices which, perhaps, could not have been done legally in the past.

The gap between what our national advertising tells the public it can buy our cars for and what dealers actually ask for them, has long constituted a discordant note in automotive merchandising. Due to the magnitude of the freight on an item of merchandise as heavy as an automobile, this gap cannot be entirely eliminated without injustice to buyers in various parts of the country. But it should be possible to narrow it materially by including in the list price substantially all the items which go to make up the present pack except freight.

Such a change would increase list prices shown in national advertising, but would not affect delivered prices which, after all are the dominant consideration, as they measure what the public actually pays. This change, moreover, would establish a relationship between list and delivered prices that buyers could understand and accept without any lurking doubts that perhaps they were being chiselled. Furthermore, on such basis, there could be no controversies between factories and dealers as to what delivered prices should be.

Back in the early days of the industry it was common practice to charge extra for such items as lamps and the top. But as the public came to regard such items as normal parts of a usable automobile, the industry outgrew this practice and included this essential equipment in the list price. Substantially the same situation exists now with respect to front and rear bumpers, spare tire and tube, and tire lock. The public now regards these accessories as a normal part of a usable automobile. With the exception perhaps of a few cars sold to fleet owners, practically none is sold without them. Furthermore, it is common practice to ship these items with each automobile ordered which indicates that the manufacturer expects that they will be sold with car. In fact, only last week it is reported that the production line in one large factory was stalled because workers attaching bumpers, not included in the list price, couldn't keep up with the conveyor.

What Standardized List Prices Would Mean

Delivered price = List price + freight (and taxes).

List price = Car + usual equipment (front and rear bumpers, spare tire and tube, and tire lock, etc.) + advertising + dealer handling.

The list price on this basis would represent a car fitted with the equipment which the average buyer has come to regard as essential to a complete car. It would also include advertising and the dealer's cost of preparing it for the road.

Under this policy, the list price would give the buyer a clearer picture of what the car would cost him and, moreover, would narrow the gap between the list and delivered price to the freight.

Other than the possibility that if one or a few manufacturers include these items, they thereby put themselves at a competitive disadvantage in their list price advertising, there does not appear to be any reason why these items should not be included in the list price just as lamps and tops were included 20 or more years ago. It should be possible to overcome this difficulty, however, as in an industry where the cooperative spirit is as strong as it is in the automotive, an agreement standardizing the accessory equipment to be included in the list price does not appear to be unattainable. If there are any doubts as to the legality of such an agreement, NRA channels can be used to surmount this hurdle.

The curious practice of charging the customer extra for advertising, is another element tending to broaden the gap between list and delivered prices on some lines, which is difficult to justify on rational grounds. Advertising, whether national or local, is a legitimate cost of doing business just as much as the compensation paid the salesman or the salesmanager. As such it should be part of the advertised list price. Some factories have eliminated this charge, others require the dealer to absorb it while still others permit the dealer to pass it on in the delivered price. It should be possible for the industry to reach an agreement on the handling of this item that would make it part of the list price.

The remaining items which go to make up delivered prices are unloading, conditioning, attaching equipment, washing, gas, oil, grease, etc., assuming there is no padding. All of these items lend themselves to flat-rating and the flat-rate could be included in the list price. Their cost may not be exactly uniform in all parts of the country nor perhaps on each model of the line. But an average could be struck that would not work any great injustice on the dealer. Certainly the problem of flat-rating these costs should be no more difficult than that of arriving at standard prices for a diversity of repair operations.

Warranty service is in the same category as advertising so far as being a normal expense item, and as such seems to belong in the list price rather than as an extra item.

Of course, in adopting these policies, factories might have to revise discounts, up in some cases and perhaps down in others, in order to give the dealer an adequate gross profit. However, fair-minded factories and fair-minded dealers should be able to solve this problem.

What would be the effect of the adoption of these policies?

The advertised list price would then cover the car, equipment, such as bumpers, spare tire and tube, tire locks, etc., which the public now regards as part of a complete automobile, advertising and the dealer's delivery costs. The only variable item would be FREIGHT, and the public in each area would soon come to know about what the freight charges would average in a vicinity. Consequently a mental calculation would enable the prospect quickly to translate a nationally advertised list price into a close approximation of the delivered price he will have to pay. Furthermore, any buyer who doubted the reasonableness of the freight charge could quickly check its correctness for himself. Under such conditions, doubts that now exist in the minds of many buyers as to the fairness of delivered prices would be eliminated, as would sources of controversy between factories and dealers over this point.

The ultimate solution of the problem possibly is delivered price advertising. But this involves so many difficulties that it would perhaps be best to limit present consideration to the standardization of a list price basis.

JUST AMONG OURSELVES

Employment Passes 300,000 Mark

WAITERS and taxicab drivers have been furnishing the most publicized labor trouble lately, and nobody in the automotive industry will begrudge them their places on the front pages.

The end of February will see the automotive plants in full swing with plenty of work and good income for additional workers. Latest reports indicate that the automobile factories were employing well over 300,000 men as February began. "More than 100,000 men," Alfred Reeves tells us, "many of whom have had little gainful employment in three years, have been recalled by the motor factories."

Other reports point to definite labor shortage in Detroit in specialized branches. There are indications, however, that tool and die work, much of which was spread out to various parts of the country during the strike last fall, has not all been reconcentrated in the Detroit area.

* * *

Organization Friction Is Waste

FRICTION is waste. The production manager and the engineer automatically recognize this platitude, even though occasionally they may purposely generate such waste as an aid to solution of a special problem. They always seek to eliminate friction, in other words, unless they have a definite reason for wanting it to remain.

The general executive in handling his organization and personnel problems could do worse than ponder this mechanical principle.

Engineers sometimes have designed bearings exceptionally capable in performing the function assigned to them except for the fact that they needed too frequent lubrication; due to some detail in their relation to the other parts with which they had to rotate they consistently generated friction which resulted in the burning up or throwing out of the lubricant. Faced with such an indication during a test, the engineer doesn't go away and leave it, hoping that a few months later he may find the friction dissipated by some mechanical legerdemain, and the engine running smoothly. He knows that when he comes back the unit would be rocking along more roughly than ever; that it would be only a question of time until it breaks down, perhaps ruining even a number of parts with which it wasn't in direct contact at all.

The engineer tests his designs regularly, looks for friction and doesn't leave until it has been reduced to a minimum, either by changing the bearing itself or by changing the contiguous units. He keeps a positive attitude of mind toward the problem until it is solved to the best of his ability.

Organization problems need the same sort of consistent, positive treatment. Psychological laws, while less concrete and harder to focus than physical laws, nevertheless operate with far more consistency than the average executive likes to admit or believe. A man in a job, like the bearing, must not only be capable of doing a good job under the right circumstances, but must be capable of doing it in intimate contact with adjacent people and events. Only once in a blue moon is it good business to redesign a whole engine to fit a single bearing.

* * *

A Big Four Instead Of a Big Three

NEVERTHELESS, there is no downing the fact that more than one Person of Power is still dreaming about how to re-etch part of the automotive picture so that it will show a Big Four instead of a Big Three.

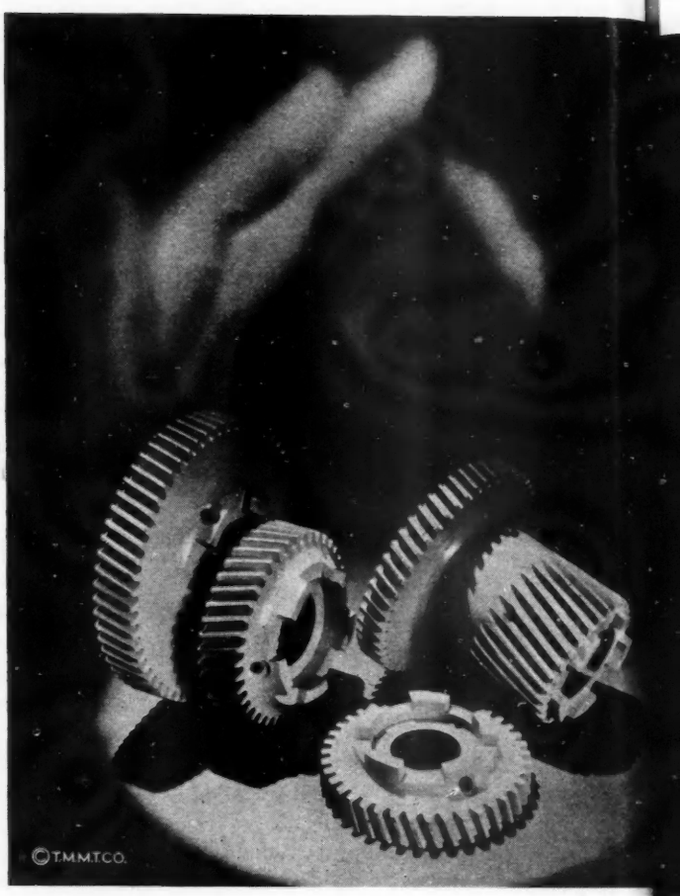
It's always possible, of course, that the cards will be shuffled to result in a "Big 3½"—or maybe a couple of ½'s for that matter.

If this ever does come about, it will be a great thing for the future of the new group if it shall have been put together on the basis of long-term economic and business administration study with only minor reference to stock market considerations at the time of combining. There is too much conversation, it seem to us, about "the time being ripe—or unripe" for automotive merger developments. Certainly some periods are better than others for making such moves, but permanent success can come only if final decision rests in the hands of those who hope to profit over a period of years from operating a successful manufacturing business. The current success of General Motors, Chrysler and Ford has little relation to the "time having been ripe or unripe" at the assembling of their original units.—N. G. S.

Quieter "Silent" Transmissions

Part 2

by Joseph Geschelin
Engineering Editor, Automotive Industries



SILENCE is golden. But with the term applied so generously and impulsively to passenger car transmissions it has helped drive many a production man to distraction. In fact, recent discussion leads us to suspect that the factory may suddenly shift the burden to engineers with the suggestion that they do something about the design of the unit instead of simply specifying increasingly close tolerances on manufacture.

Nevertheless, production men can't throw up the sponge without first making certain that they have exhausted the possibilities of the remarkable gear manufacturing equipment brought out during the past two years. At least in the building of precision gear sets obsolescent equipment must not be tolerated.

The market today affords a wide variety of improved gear making machinery including shapers, hobbers, and generators. You can take your pick of the method depending upon volume of production and the amount of money that can be spent on the transmission. To supplement these machines, we now have equipment for burnishing, shaving, lapping, and grinding thus providing alternate methods for finishing to desired limits of accuracy and of surface finish.

Finally this production equipment is balanced by the recent introduction of inspection devices, both mechanical and optical, some capable of measuring within 0.0001 in. These devices provide a positive means of checking such controlling elements as tooth spacing, lead, and accuracy of the involute curve.

Despite the conflicting opinion concerning this or that element of transmission building, there seems to be unanimity on the basic principle that a really quiet transmission depends upon the combination of constructional design with *extreme* accuracy in the manufacture of component parts. For it is an acknowledged fact that gears will perform to the best advantage when the rigidity of support and closeness of bearing fits is correct for the operating conditions.

There is no denying the fact that the use of poorly made gears in the best transmission is a bad investment since it will bring but little relief. While it is no longer universally believed that inaccurate gears are wholly responsible for noisy transmissions, many now are confident that the use of extremely accurate gears should make a well-designed transmission almost noiseless.

According to some experimental evidence developed by the Pratt & Whitney Co., gear tooth elements should be held within a tolerance of 0.0002 in. of perfect proportions if the transmission is to be *absolutely* quiet. Another investigator has gone so far as to set the limit at 0.0001 in. as the ideal for quiet gearing, a degree of accuracy practically unattainable in economical volume production.

The gear industry is apparently well prepared to supply equipment capable of producing the kind of gearing that would meet our *present* conception of "silence" in keeping with the order of noise level in other parts of the running gear. And our impression is that when even quieter gears are demanded, these manufacturers may have the answer. However, the present order of requirements is well within reach through modernization—which must be the next step in the gear plants.

It is in an effort to produce better accuracy at reasonable cost that

Require Accurate Tooling

Full advantage must be taken of the possibilities of modern equipment before the factory can assert that further progress awaits improvement in design

machines such as lappers, burnishers, shavers, and grinders have been introduced recently. Apparently they serve at least two purposes—to rectify dimensions and form as well as to improve surface finish, both being controlling factors in the production of quiet gearing.

Recent experience with the production of precision gears indicates that accuracy depends to a large extent upon the method and rigidity of mounting the gear blank in the machine. It has also been found that variations in lead, very small but nevertheless fatal to a quiet gear set, result from minute inaccuracies in chucking the finished gear when grinding the bore.

Many of the machines on the market today are inherently more rigid in construction than former designs thus being better suited to resist vibration and chatter. The ability to retain accurate adjustment for long intervals has become recognized as one of the most important attributes of an acceptable gear cutting machine.

Fred W. Cederleaf, in his Chicago S.A.E. paper, has stated that in his opinion gear grinding is probably an ideal method of finishing precision gears but found that the method has not been widely adopted because of its high cost. In recent correspondence, a prominent builder of gear grinding equipment confirms the belief that gear grinding probably will always cost more than any other method of gear finishing since it is expected to remove more of the errors and consequently is required to remove more material than by any other method.

Much further improvement is expected to come from cutters of special or modified form made with even greater exactness than ever before. Evidently there is considerable research in this direction and its practical outcome should be of real interest to everyone concerned.

A real drive has been made to improve the accuracy of the product by building better accuracy into the machine. It doesn't take much ingenuity to realize that if the work produced by the machine is to be held within 0.0001 in., the elements of the machine must be made with a higher order of accuracy. No doubt this is the very thing that tends to obsolete the old line equipment which though perfectly suited to older standards fails to meet a different order of refinement.

While the single helical gear is used chiefly in passenger car transmissions we should not lose sight of the advantages of herringbone gearing. Such gearing has been used on occasion but has not been favored because of manufacturing difficulties. Lately this gearing has been adopted in some heavy duty transmissions and equipment is now available which permits a rather economical production method.

It is obvious from the foregoing that the equipment now on the market offers the possibility of economical production of gears of a high order of accuracy. In the opinion of many, the most important elements of gearing intended for quiet operation are: lead and involute curve precision and no doubt much of the emphasis in current production will be aimed at these factors. Their control together with better gear steels and precise methods of heat treatment are vital to quiet transmissions and offer some tangible solution provided the design of the unit is right.

Incidentally, it is very interesting to learn that a certain manufacturer whose identity cannot be revealed at the moment is coming out soon with a gear grinder, designed specifically for narrow-faced gears such as are used in transmissions, and capable of doubling the production rates now current. Whereas Mr. Cederleaf found that the additional cost of ground gears is 1 1/3 cents per tooth, the new machine is expected to reduce this figure to about 0.7 cent per tooth.

At any rate looking back over the possibilities of producing "quiet" transmissions with available new equipment, we feel that the production department can't throw the gear problem into the laps of engineers until it has conscientiously tried out the solution offered by modernization.

Obsolete equipment not only can't be used as a criterion of what can be done but it's the obsolete equipment more than anything else that is responsible for much of the noise in production gears.

This is the second in a series of two articles on the problem of reducing transmission noises. The first appeared in *Automotive Industries* of November 25, 1933, page 640.

Radio department of Henry Ford Trade School develops mechanism to make four tests on 38 pins per minute and sort them for 1/10,000 inch variations

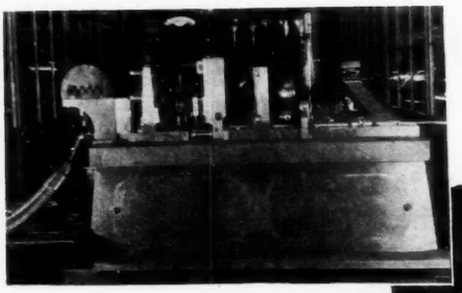


Fig. 1 (above) View of Ford piston pin inspection machine which performs four operations automatically

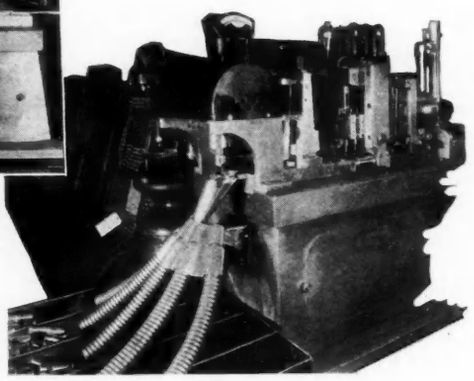


Fig. 2 (right) Close-up showing distributing spouts at exit end of machine

Pin Measuring Machine Tests and Sorts

AUTOMATIC checking of four specifications on Ford piston pins as well as a final sorting operation are accomplished in one setting on a new pin measuring machine developed by the radio department of the Henry Ford Trade School. The machine is used in regular production, gaging about 38 pins per minute.

The operations performed by this machine are as follows:

1. Testing the surface of the pin for smoothness.
2. Testing the pin for hardness.
3. Testing for taper.
4. Testing for out-of-round.
5. Sorting the pins into groups of five different sizes in 1/10,000 of an inch steps. Three of the sizes are used, the other two being under size and over size.

The machine comprises a base plate having a series of heads as shown in Fig. 1, through which a guide-way and reciprocating draw bar extends, the piston pins being intermittently moved by the drawbar along the guide-way with each pin remaining stationary under each head long enough to be gaged. Kick-out mechanisms are disposed between each of the heads, the stroke of the drawbar being so adjusted that the pins come to a complete stop beneath the heads and rejection is made while pins are in motion from one head to the next. Generally speaking, each kick-out mechanism is controlled by the measuring head just preceding. If the pin is not within the allowable size, the kick-off mechanism functions on the next stroke to throw the pin laterally into a container for this purpose. Separate containers are provided for each kick-out so that the defects of the pins in each container are the same, thereby facilitating salvage.

In operation the pins are placed in a hopper which conducts them progressively into position upon the starting end of the guide-way. The drawbar then acts on the end of the pin and slides it axially along the guide bars to position beneath the surface smoothness testing head. This head comprises a magnetic pick-up device which is oscillated back and forth across the surface of the pin. Any roughness of the surface causes vibration of the pick-up needle which generates a small current. The current so generated is amplified through vacuum tubes, the output of the amplifier operating a relay. A current of three milliamperes is sufficient to operate the relay which completes the circuit and energizes the first kick-out solenoid. If the pick-up mechanism generates less than three milliamperes, the pin passes to the next station.

When the pin passes the surface test, it is moved by the drawbar to position beneath the hardness testing head and the next pin is conducted under the surface tester. The hardness tester comprises a mechanically operated Scleroscope. The light from a 6-volt bulb is focused through the Scleroscope tube onto a photo-electric cell which is connected in series with a meter type relay controlling the solenoid for the next kick-out mechanism. The Scleroscope weight is mechanically operated by means of a suitable vacuum pump and valve. If the pin is not sufficiently hard the rebound is less so that the light is not obstructed and current is generated in the cell which holds relay closed. The cell does not instantly operate the kick-out mechanism, but on the contrary the current sets a relay which energizes the kick-out solenoid only at the completion of the next stroke of the drawbar. The pin is thus moved out of the head to position over the solenoid before it is discharged.

The pin now moves the first of the measuring heads, comprising a device for measuring the taper between the ends of the pins. The apparatus consists of an inverted "T"-shaped arm having the respective ends of the cross bar bearing against the ends of the piston pin, the bar being pivotally mounted at its center to the head with the center arm extending upwardly where it connects with a second arm which is pivoted to the head. A mechanical amplification of about 300 to 1 is obtained by means of these two arms. The cross bar is brought down against the pin and if one end of the pin is larger than the other the cross bar is caused to rock. This operates suitable contact points on the second arm, energizing a relay which causes the kick-out mechanism to reject the pin on the next stroke of the drawbar.

The next station comprises an out-of-round measuring device consisting of a pair of rotation rollers which are substituted at this point for the guides so that when the pin is moved into position beneath the head, the pin is rotated between the rollers. A pair of arms engaging the respective ends of the rotaing pin must be maintained in a neutral position by the pin to prevent the subsequent kick-out mechanism from operating.

With the apparatus now in use both of the ends of the pin are measured for out-of-round, and out-of-round at either end will cause rejection. The machine now in use incorporates both the taper measuring head and the device for measuring the out-of-round at each end of the pin.

The pin now comes beneath the size selecting head where the diameter is gaged. This mechanism comprises a pivotally mounted arm which through mechanical amplifications measures

(Turn to page 193 please)

Car Makers Show Renewed Interest in Broadening Parts Distribution

by Athel F. Denham
Detroit Editor,
Automotive Industries

ARE car factories about to expand their replacement parts and accessories merchandising programs to compete more effectively with the independent manufacturer and his jobber distribution, especially as regards independent service stations? On the surface the answer would seem to be that there is a tendency in that direction. There is the new experimental plan of the Ford Motor Company under which key dealers in trading areas are given longer discounts on parts in exchange for their assuming functions of a parts jobber, or at least such functions as: putting on parts salesman to contact Ford dealers and independents; purchase of Ford trucks for the delivery of such parts to dealers and independents, etc.

General Motors, moreover, with its consolidation of parts warehouses for different units, possibly under the direction of the newly formed General Motors Parts Corporation, seems to have laid the groundwork for higher concentration of parts merchandising efforts. Reports that Chrysler Motor Parts is about to expand materially its number of parts warehouses for greater ease of parts distribution to the service trade have been neither denied nor affirmed by that corporation.

Unfavorable Dealer Reaction

The addition of a new service promotion division to the factory organization of the Hudson Motor Car Company, under the direction of T. H. Stambaugh, might seem easily to be another factor in this direction.

One large manufacturer of motor cars has held informal discussions with its dealer groups in certain localities along the lines of possibly appointing certain existing general parts jobbers as exclusive distributors for its replacement parts in such territories.

Despite these indications, however, responsible men in the car factories themselves are doubtful whether such expansion plans would be of material benefit toward increasing the factory's share of the parts business. They point out that the major function of the car factory still remains the selling of new cars, and no plan can be made effective which in any way might militate against new car sales volume, which in turn means at present the continuation of existing relationships between factory and dealer. As the chief sales executive of one large corporation points out, it is not conceivable that the car factory would be willing to court antagonism and possible increased dealer mortality merely for the sake of increasing volume of replacement parts sales.

Dealer Lacks Experience in Parts Merchandising

This particular executive, in discussing the Ford plan, said: "We are, of course, watching the plan with considerable interest, but I have sincere doubts as to its feasibility not only for general application but even in the direction of increasing the parts business of that company. In the first place, its practicability does not seem to extend at best beyond perhaps a couple of hundred trading areas. In the second place, car dealers have no background along the lines of effective parts merchandising. A few might do a good job. Merely setting up wholesaling discounts to such key dealers and even requiring them to distribute such parts and put on parts salesmen cannot be expected to offer serious competition to the jobber handling parts for all lines of cars, and able to extend credit to his customers."

The major service and parts executive of another important car factory had this to say: "It is quite possible that the Ford plan may help the Ford organization at least temporarily in increasing its distribution to its own dealers. It is to be very much doubted, however, that it could be applied to other car producers' organizations.

"In the final analysis," this executive stated, "the only way we can see at present in which the car factory could compete effectively with the parts jobber and the independent parts manufacturer is in the exact duplication almost of that type of distributing and merchandising set-up, with distribution of parts independent from new car sales.

"This, we are convinced, the industry is not ready for, and won't be as long as our present type of dealer set-up continues. Exclusive availability of 'genuine parts' in his territory is too important a factor in the new car franchise to the dealer."

There is no doubt, however, that from time to time there will be tried various means and methods of securing an increased share of parts volume. It is even more probable than possible that such car factories as have established warehouse distribution will "permit" independents to order genuine parts direct from such warehouses on the same basis as, but with shorter discounts than their own car dealers, as was the case for Buick, Olds and Pontiac under the BOP set-up.

No G.M. Change Expected

As to the other projects mentioned, it is not believed that distribution and merchandising of parts from warehouses to dealers, etc., from the warehouse on will be taken out of the hands of the individual unit field organizations in General Motors. The indicators point the other way. The only place in General Motors where there is a combination of parts sales efforts is with Buick and Pontiac. Due to the high proportion of dual Buick-Pontiac franchises, parts and service field representatives for both lines come under the direction of Pontiac, as is the case with new car field sales forces.

While details of the new Hudson plan are not at hand, it is believed that this concerns itself mainly with assisting dealers in the merchandising of service business, and therefore directed mainly at improving the dealer's operations rather than at building up factory parts sales.

Unconventional Rear Suspension Promises Be

by E. S. Taylor and O. E. Wolff
Massachusetts Institute of Technology.

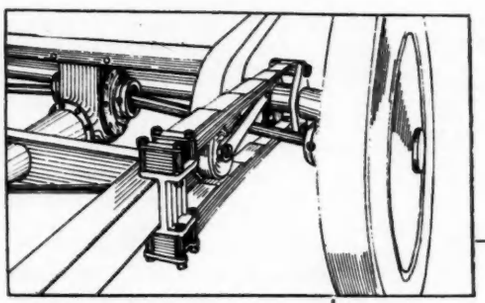


Fig. 1 (Above). Miller cars in the 1931 Indianapolis Race offer some attractive possibilities

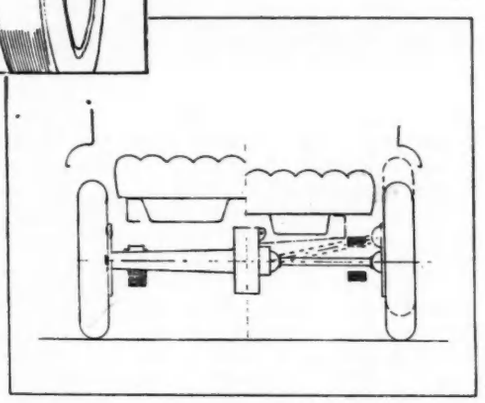


Fig. 2 (Right). There is a possibility of lowering the rear seat and the rear of the top

WITH the attention now being given to automobile spring suspension in the front, the spring arrangement in the rear has been somewhat neglected. An objectionable feature of the conventional rear suspension is the tendency of the rear wheels to leave the road when passing over bumps, resulting in loss of traction and increased tendency to skid. This tendency could be reduced by decreasing the unsprung weight at the rear, which would also improve the riding qualities. While there is no doubt that the objectionable pitching of a car is largely due to unduly stiff front springs, it can be moderated to some extent by additional sprung weight at the rear. It is with these shortcomings in mind that the following suggestion is offered. There is no advantage in independent rear springing unless the design makes possible an increase in wheel travel or a reduction in unsprung weight. Most independent springing designs do show advantage in one or both of these desirable characteristics.

The Miller cars (Fig. 1), which appeared in the 1931 Indianapolis race, presented a solution for the rear suspension which, while not new in principle, offers some very attractive possibilities to the designer. The problem has recently been simplified since excellent universal joints capable of operating satisfactorily with relatively high angularity are now available. This design retains the simplicity and lateral rigidity of the conventional suspension. At the same time it allows a great reduction in unsprung weight on the rear axle. This should materially improve the ability of a car to hold the road on rough corners and hills where rear wheel bounce is most objectionable. As indicated in Fig. 2, there is also the possibility of lowering the rear seat and consequently the rear of the top. This would improve both the appearance and the aerodynamic drag of the body. The saving in height is due to the fact that the differential is sprung and moves with the car, while the structural axle is of small dimensions and may be bent below the wheel center like a front axle. This is possible because it does not house the driving axles. Slight further reductions in rear seat height might be accomplished by the use of a banjo frame or by the elimination of the frame behind the spring supports, as in Fig. 3. All or part of the saving in height might be sacrificed for increased wheel travel, if this were thought desirable.

With most independent springing arrangements it is necessary to provide a linkage which is nearly, if not quite, as heavy as the axle in the arrangement shown in Fig. 3. Consequently, the unsprung weight of this suspension will compare well with any independent springing arrangement. The possibility of mounting the brakes and brake

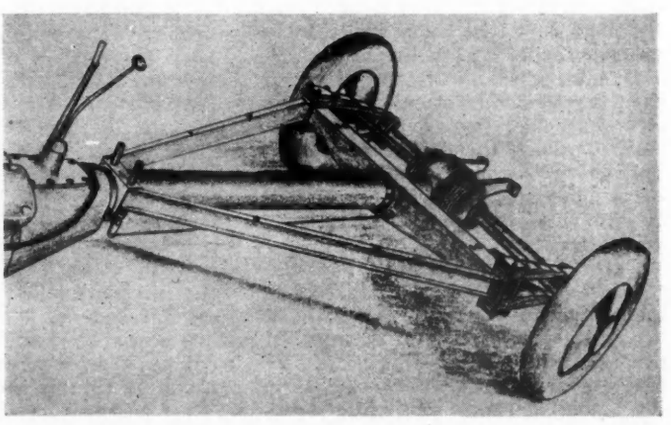


Fig. 3. Further reductions in rear seat height might be accomplished by the elimination of the frame behind the spring supports

Better Riding and Smoother Performance

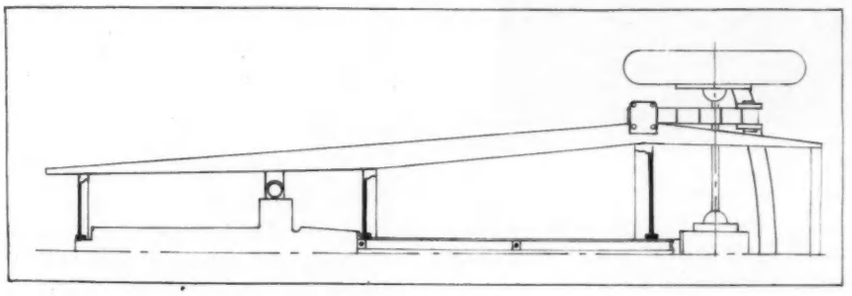


Fig. 4. It is possible to mount the entire engine, transmission and differential assembly flexibly as is shown here

drums on the differential housing in a manner similar to the Cord front drive will be noted. If cast-iron or composite brake drums are used, this may be a considerable saving of unsprung weight. Also, braking torque will not be taken through the springs. With this design, the conventional frame might be eliminated, substituting for it a large central tube around the drive shaft, as shown in Fig. 3. If this tube is proportioned so that its strength and stiffness in bending are equal to the strength and stiffness of the two open section frame members which it replaces, it will be very much stiffer torsionally. (A frame 100 times stiffer is easily possible.) The front suspension could be made similar to the rear by designing the engine crankcase so that it could be used for a structural member.

At first glance, it appears that the design shown in Fig. 3 offers an improvement in smoothness due to the fact that the torsional effort of the engine is balanced through the tube connecting the differential and the engine crankcase. However, uneven engine torque will result in variations of engine speed, winding up and unwinding the entire drive in the same way as in the conventional drive.

The reactions of these variations will be transmitted as vibration to the body, as they will be in any arrangement with a solid engine mounting. If we expect the smoothness of the conventional car with a flexibly mounted engine, we must likewise provide freedom for the engine to rock about a longitudinal axis.

If we forego the possibility of using the tube around the drive shaft for a frame member, it is possible to mount the entire engine, transmission and differential assembly flexibly, as shown in Fig. 4. The advantage of this design over allowing the motor and transmission to swing independently of the differential is that the driving torque is balanced through the tube and consequently oscillations of the engine will be of comparatively small amplitude. More flexibility may be provided and connections to the engine will present an easier problem.

One objection to the proposed design might be the transfer of differential noise to the car body. With the flexible mounting, this should not be a serious problem.

The ease of mounting an intermediate bearing to reduce whip in the drive shaft will also be noted from Fig. 4.

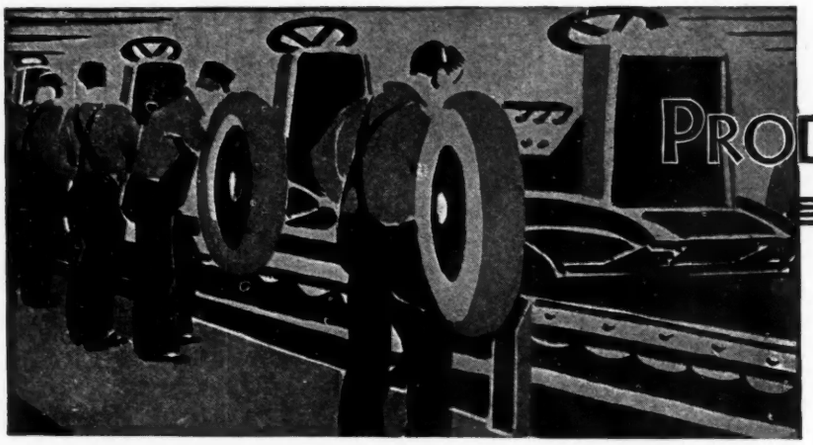
In view of the facts that this particular drive offers the advantages in improved riding qualities of independent rear suspension, together with the lateral stiffness of the conventional axle, and, at first glance presents no difficult or unusual problems, it seems strange that it has been neglected so long.

British Motorcycle Output Lower in '33

British motorcycle production in 1933 is estimated to have amounted to 58,000 units, as compared with 68,000 for 1932 and 162,000 for the peak year 1927. Exports of motorcycles from Great Britain in 1933 remained on substantially the same level as in 1932, and the only cause for the decrease in production was shrinkage of the home market. To stimulate sales, manufacturers turned from two-cylinder to the smaller single cylinder machines, and a tax concession was made on the lightest type of machines. For this reason the contraction in turnover is greater than that in the number of machines produced.

The total number of motorcycles registered in Great Britain has shown a continuous decline for a number of years past, from 637,000 in 1931, to 584,000 in 1932 to 546,000 in 1933. In export markets British manufacturers have been successful in improving their position almost continuously since 1924. Considering the motorcycle exports of the four leading countries only, Britain obtained 73.8 per cent of the total business (on a value basis) in 1933, as compared with 68.9 per cent in 1932 and 56.3 per cent in 1931. On a unit basis, Britain's share was 75.2 per cent in 1933, as compared with 69.4 per cent in 1932 and 54.9 in 1931.

One thing that is perplexing the British motorcycle industry is to what degree the decline of the last few years is due to the depression and to what degree it is due to the competition of the small four-wheeled road vehicle.



PRODUCTION LINES

Hard Facing

Haynes Stellite has delved into the by-ways of hard-facing applications in many fields for a number of years. Now the whole story is told in a handsomely illustrated book (paper covered) covering a wide range of industries and completely indexed for convenience. The first section gives the properties of Haynes Stellite, with some suggestions as to the technique of using the several grades. A large section is devoted exclusively to automotive uses.

Chameleon-Like

According to Howard Ketcham of the Duco Color Advisory Service, fewer cars appeared in black at the recent New York Show than ever before. Many prominent exhibitors omitted black entirely. Metallic colors showed no gain over last year. Maroon is in the ascendency, exceeding any other hue including black. The order of preference, judged by the entries at the Show, runs: maroon, blue, green, brown, gray and black.

Get Yours

No one knows yet what to do with the $500,000 of PWA funds which were turned over to the Aeronautics Branch on account of flivver plane development. One hunch is that the money will be used to finance a manufacturing program and pay for the tools and dies. However it is used, the expenditure must be justified on the ground that it will produce employment. On this basis it is unlikely that the fund can be used to finance fundamental design.

Do You Agree

According to Director Vidal, the flivver plane can be built and maintained in service much easier than a modern automobile. It must look like an airship, necessarily limited in performance, but above all must be safe.

Brass Tacks

In specifications, the projected flivver plane, to sell delivered at $700, is to be of all-metal construction, two-place, with a landing speed of about 25 m.p.h. Whether the fuselage will be low wing or high, what kind of power plant and such like details, must be answered by concerted action of the manufacturing industry.

Needs Light

Isn't there a curious commentary in the paucity of published data on modern body design, particularly as to details of fender and body panel dies. Doubtless both depend upon specialized craftsmanship and much empirical knowledge, and yet there is much fundamental background that may be common to all who ply the trade.

Blue Streak

Autocar's Blue Streak engine, the big, dependable, heavy-duty six, is destined to have its name spread to the masses via an equally dependable but small passenger car six which took the same designation this year. What's in a name?

Auto Influence

Automotive influence has touched at least one machine tool builder who is very active in our field. We mean The Heald Machine Co. They find that the SAE fine pitch thread makes a better job than the old USS and have changed their fastenings accordingly. It makes for better fits and stronger joints.

Piston Finishes

Undoubtedly the latest development in pistons is the "alumiliting" of the Lo-Ex pistons used in the 1934 Cadillac. It should be extremely interesting to watch the progress of the production technique as tempered by service experience.

Going Places

Heald has done a lot of real work in adapting cemented carbide tools for boring on their Borizing machines. They have reached the point where it is practicable to bore certain grades of steel up to 30 Rc hardness, being limited only by intermittent cut conditions.

Metal Stretching

Let's not overlook, in the rush of things, the remarkable work being done in the production of radiator fronts and grilles that embellish the 1934 cars. Each one is distinctive as to detail and manner of finish. Things are being done with metal that were not within the realm of reality only a few years back.—J. G.

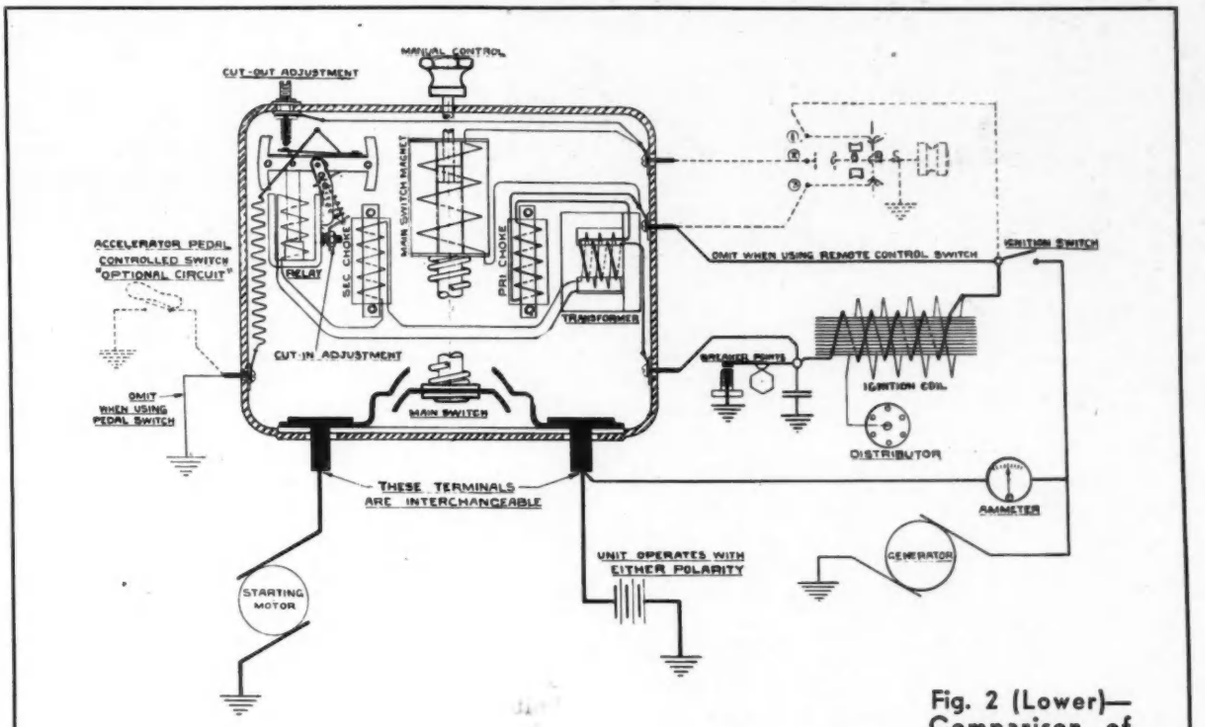


Fig. 1 (Above)—Wiring diagram of Synchro-Start, showing both internal and external connections

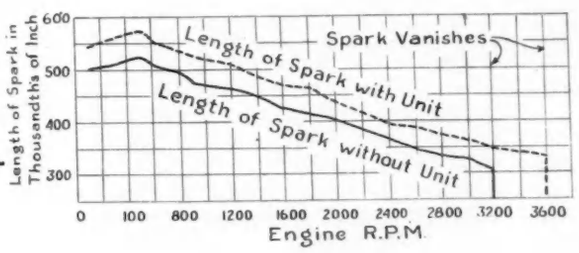


Fig. 2 (Lower)—Comparison of spark lengths in the atmosphere from an Auto-Lite interrupter and spark coil, with and without the Synchro-Start unit

New Coincidental Starting System to Be Made by Auto-Lite Prevents Stalling

A NEW coincidental starting system known as the Synchro-Start will be manufactured and marketed by the Electric Auto-Lite Co. of Toledo, Ohio. With this system the engine is started automatically as soon as the ignition switch is closed. In case the engine is ready to stall—as a result of misfiring while freewheeling, for instance—as soon as its speed drops below a certain value the starter switch is automatically closed and the starter cranks the engine, thus preventing stalling. The starter switch is automatically opened as soon as the engine reaches a certain minimum operating speed (about 250 r.p.m.).

What distinguishes this system from other coincidental starting systems is that its operation is dependent on that of the ignition circuit breaker. A wiring diagram showing the internal and external connections is reproduced in Fig. 1. The device itself comprises a pressed-steel box containing the starter switch with a magnet for its operation, a transformer receiving primary current from the car battery through the ignition interrupter, a relay energized by the secondary current of the transformer and controlling the circuit of the starter-switch magnet, and choke coils in circuit with the primary and secondary windings of the transformer respectively.

The various circuits can be readily traced out in the diagram. When the ignition switch is closed, current from the battery arriving through the ammeter will flow through the wire marked "Omit when using remote-control switch" to the primary choke, then to the primary winding of the transformer, to the ignition interrupter and through the points of this interrupter to ground, thence returning to the battery. A secondary current will be induced in the transformer, the magnitude of

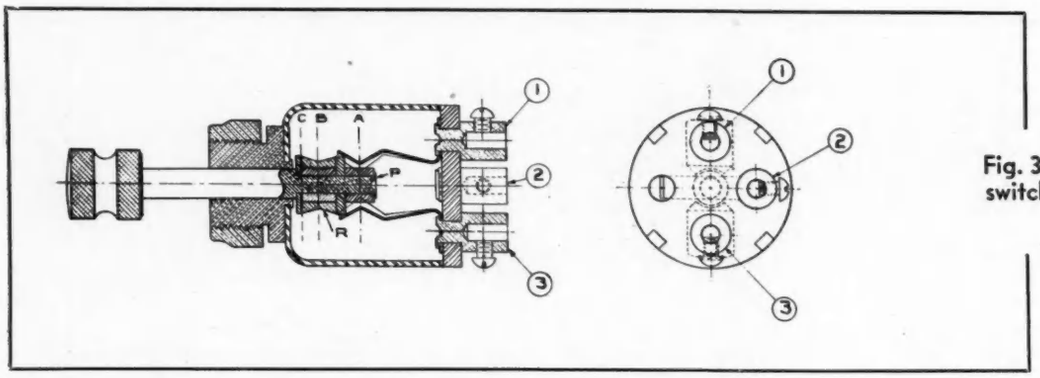


Fig. 3—Remote control switch in section and end view

which will depend on the frequency with which the circuit is broken, and hence on the speed of the engine. As long as the engine is turning over only at cranking speed, the secondary current will be very small and incapable of operating the relay. The cut-out points above the relay are then held closed by a spring. Current from the car battery flows through the ammeter, the ignition switch, the wire marked "Omit when using remote control switch," the coil of the main switch magnet, the cut-out at the relay, and thence to ground and back to the battery.

As soon as the engine picks up its cycle and increases in speed to above 250 r.p.m., the secondary current of the transformer, owing to the higher frequency of its primary impulses, becomes sufficiently strong to operate the relay, and the cut-out is then opened, interrupting the flow of current through the coil of the main switch magnet, with the result that the main switch is opened by its spring and the starter is disengaged and stops.

Among the advantages claimed for Synchro-Start are that it saves battery current while restarting because it does not permit the engine to come to a full stop. As a matter of fact, the relay is so adjusted that it allows the starter switch to be closed when the engine speed has dropped to 50 r.p.m. For the same reason, it is claimed, wear and tear on starter parts is reduced. Also, because the flywheel is revolving and there is therefore less difference in the pitchline velocities of the starter pinion and flywheel gear when engagement is made, the engaging action is more quiet. There is no delay in cranking when the engine stalls, and the engine is cranked continuously until it starts.

If the engine is stalled while climbing a hill, the starter is engaged and prevents it from turning backward, giving the driver time to change the gears. As soon as the clutch is disengaged the starter will start the engine again.

The choke coils in circuit with the primary and secondary windings of the transformer are said to have the effect of increasing the maximum voltage produced by the spark coil at any particular engine speed, as shown in Fig. 2 herewith.

A remote control switch has been worked out for use in connection with the Synchro-Start, and is shown in section in Fig. 3. It is a three-position push-and-pull switch, which may be conveniently mounted on the dash. By pressing lightly against the button of the switch, the starter main switch is closed and the engine is cranked. By releasing the pressure on the button, the starter circuit is broken and the system set for automatic starting as explained in the early part of this article. By pulling the button all the way out, the Synchro-Start is entirely disconnected, so that the ignition switch may be closed without the starter cranking the engine. This is desirable in the case of certain service operations, and especially when it is desired to crank the engine by hand for any reason.

Instead of making the system fully automatic, it can also be made semi-automatic so that the engine is cranked only when the accelerator pedal is depressed. In that case the regular ground connection of the Synchro-Start is removed and the ground connection is established through a switch controlled by the accelerator pedal

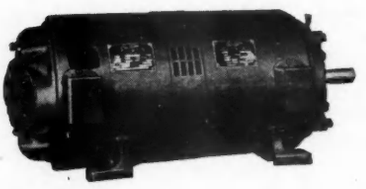
Dual Motor for Refrigerator Trucks

THE Century Electric Company, St. Louis, Mo., has developed dual motors in ½, ¾, 1 and 1½ horse power sizes for the operation of refrigerated trucks. They are designed with characteristics suitable for operation with the generators supplied by the Whitaker-Upp Company, Kansas City, Missouri.

The Whitaker-Upp generator is installed under the hood, supplying electric power for refrigeration.

The dual motor operates on current supplied by the generator when the truck is on the road and from central station power when the truck is in the garage.

The dual motor consists of two separate and distinct motors in one two-bearing frame with the two rotors on one shaft. This makes a compact unit that is convenient to install and occupies small space requiring only one shaft connection to the driven apparatus.



Offered by the Century Electric Co. for refrigerator trucks

This type of unit allows each motor to be designed for the best operation characteristics and still add to the compactness of the whole installation.

Barney Roos' Fire Engine

THIS swell picture of a three-horsepower fire engine racing to a blaze was made in 1910 by a chap whose name was and still is "Barney" Roos. It is, perhaps, the most famous photograph of its kind that ever was taken, but taking it almost, and possibly should have, cost young Roos his summertime job. Here's how it happened:

Roos at the time was a young man with an ambition to write the symbols M.E. after his name. Quite logically, his chief occupation was attending classes at Cornell for the purpose of realizing that ambition. In the early summer of 1910, the beginning of his second summer at that particular kind of fill-in work, he was employed by Brown Bros., photographers, of New York, to do this and that as ordered and directed.

As one of his first assignments, young Roos was sent to take saleable pictures of the Yale Commencement. There was one picture, he was told, which he must bring back. It was a photograph of young Robert Taft, Yale 1910, of the Presidential Tafts, in cap and gown with his diploma clutched proudly in his hand. This picture was the one "must" of the mission. The embryonic engineer was given to understand that if he didn't get it, he might as well go right up to Ithaca, sit on a curbstone and wait for the opening of the Fall semester.

Things didn't go well, at all. In spite of repeated entreaty, cajoling and pleading, Taft would not pose. He refused to have his picture taken. What to do about it? There was nothing that could be done except to take other pictures and hope for a softening of young Taft's heart or a chance to get a "shot" at him surreptitiously.

When the time came for the still hopeful engineering student, but less hopeful photographer, to go back to New York, he had exposed 23 of his 24 plates and didn't have the Taft picture. Resigned to his fate, he decided to call it a tragically misspent day. A fire engine came full tilt up the street. There was no point in taking back an unexposed plate, so he stepped out into the middle of the street and shot the fire engine. Immediately after the thing was done, along came Taft, cap, gown, diploma and everything, and wanted his picture taken. Tough luck rubbed in.

For some reason Barney wasn't fired. Arthur Brown says he doesn't know just what the reason was. But it turned out that the fire engine picture was, and still is today, a larger seller than the Taft picture could possibly have been. Many hundreds of prints of it have been sold during the 24 years that have passed since it was taken. The young man of 1910 who made it grew up to be the president of the Society of Automotive Engineers and chief engineer of the Studebaker Corp. Add to his Who's Who listing of worthwhile achievements the fact that he was the maker of a photographic masterpiece.

Pin Measuring Machine Tests and Sorts

(*Continued from page 186*)

the diameter or the height of the pin above the guide-bar. When the point of the arm bears against the pin it swings a brush-carrying arm through a mechanical amplification of about 300 to 1 over a commutator having five segments. Each of the segments with the exception of the center segment is connected with a suitable relay and solenoid, the latter being arranged to selectively rotate a distributing tube (Fig. 2). It will be apparent that these commutator segments operate individual relays which are constructed to hold the distributing spout in its adjusted position until a mechanically operated switch is broken in the base of the machine.

A feature of this machine which is believed to be of considerable importance is the fact that all of the contact points, with the exception of the relay contacts, operate upon 9 volts and 14 mills of current and are used only to make the circuit. The circuit is broken through a pair of mechanically operated contact points in the base of the machine. Consequently, when the points are once adjusted the adjustment is relatively permanent.

The machine is said to be quite rugged although it retains some of the delicate apparatus characteristics of precision-measuring devices.

NRA to Present P at Conference of C

A DEFINITE policy on price provisions in codes as well as proposals that industry and trade effect further reductions in hours, will be laid before the general code conference of some 275 to 300 code authorities and representatives of more than 300 codes awaiting approval, which will open in Washington on March 5 and continue probably for the next three days.

As a preliminary to this general code conference, General Johnson announced this week that NRA would hold public hearings beginning Feb. 27 at which the public has been invited to criticize codes. These hearings are intended to give management, labor and consumers an opportunity to present their views. It is expected that they will develop constructive criticism and suggestions regarding policies and code administration for consideration at the ensuing general code conference.

The opening address at the general code conference will be made by President Roosevelt and he will be followed by General Johnson. Subsequently the meeting will split up into group conferences after which there will be meetings of code authorities and committees with NRA. A general conference of selected delegates of code authorities and committees with General Johnson will conclude the meeting.

The preliminary program for the group conferences includes the following:

Possibilities of increasing employment: Wages and hours; comparative situation of capital goods and consumer goods industries.

Trade practices: Costs and prices; protection against destructive competition and against excessive prices and monopolistic tendencies.

Trade practices: Control of production; limitation of machine hours; restriction of expansion of facilities; ethical practices regulating competitive relationship.

Code authority organization: Code administration, including compliance and enforcement; inequalities, inconsistencies and overlapping in codes; interindustry and intercode coordination; the financing of code administration; use and control of the code eagle.

Operation of codes in small enterprises; position of minorities.

In his call for the code conference, the opening sessions of which are to be held in Constitution Hall, General Johnson outlined the major purposes to include "the consideration in public sessions of the possibilities of increasing employment; protections against destructive competition and against excessive prices and monopolistic tendencies; the elimination of inequalities and inconsistencies in codes; the position of small enterprises; and the vast problem of code administration and the organization of industry for self-government." In addition, the invitation solicits suggestions to be presented during the conference for the modification, elimination or addition of specific code provisions; proposals for the elimination of overlapping of codes and for the financing of industry code administration.

The public hearings, beginning Feb. 27, will be divided into five sections and will be conducted simultaneously. To each section one of the major topics listed above for consideration at the code authority conference, has been assigned. The locations of these sectional hearings follow:

Employment
Department of Commerce Auditorium
Trade practices—production control, etc .....Hotel Washington
Trade practices—costs and prices, etc. .....Hotel Willard
Code Authority organization
Hotel Mayflower
Small business and minorities
Hotel Raleigh

The study which NRA has been making of code price provisions will be completed in time for the meeting and General Johnson has stated that its plans on this point will be ready for presentation. The NRA policy on hours of work and possibly of rates of pay will likewise be submitted. General Johnson has not formulated definitely his idea of the work week but has indicated he favors a 32-hr. week generally, although there would be exceptions. On rates of pay there is no indication of what the Administration has in mind, although there is an undercurrent of opinion here that proportionate increases in pay rates will be expected.

"We have a lot of experience, perhaps not enough, with a variety of the code provisions, which I invited deliberately," said General Johnson, "and we are beginning to make up our minds about what should and should not be included in the codes. They won't cover all the troubles because they constantly crop up, but it will be helpful."

The General stated that he will have developed his idea as to shorter hours before the general code authority meeting. He said he still is of the opinion that the work-week should be based on the multiple of eight, with the 8-hr. day, and that that system is preferred by labor. As an example, he said labor would rather have a work week of four days of 8 hr. per day than a 5-day week with 6-hr. or a 6-day week with 5-hr. Labor, he said, wants whole days. Moreover, the General stated, industry is geared to an 8-hr. day and the plan gives days and not hours off to people who profit by the shorter week. The general indicated that one objection to the plan might be that men working in one occupation for the shorter period might also take up other work, a fact which would defeat the purpose of creating more employment.

He pointed out that if employment is to be increased it is necessary to shorten hours. Even going back under the conditions of prosperity of 1926, General Johnson said, there probably would be 2,000,000 unemployed if the 32-hr. week were adopted.

The General said, however, that the greatest effect in shortening hours would be in what he termed the trades or white collar class as distinguished from the heavy industries, where the bulk of unemployment exists. It was stated that nothing can be done about the latter. The point was not developed but apparently the thought in mind is that heavy industries generally now are operating at such low rates that they are unable to engage labor up to the existing minimum hour requirements.

The General explained that there will have to be exceptions to the 32-hr. plan which was tentatively suggested. Much more could be done to aid employment and industry, he stated, if credit facilities were available. He explained that some lines have eaten up their reserves and that when they are asked to increase their

by L. W. Moffett
Washington Representative,
Automotive Industries

Policy on Code Price Clauses Code Authorities on March 5

Public invited to criticize and discuss codes at hearing scheduled for February 27—Johnson favors eight-hour day—Executive order directs employers to post code labor clauses

costs, they find they have no means even to finance their payrolls.

The problem of credits, he stated, is being worked on by an NRA committee. While the plan has not been completely worked out, it was stated, it is understood it would call for operations through the Federal Reserve Board. The NRA committee is headed by Divisional Administrator A. D. Whiteside.

It was pointed out to General Johnson that there had been complaint made at a code hearing that the Government was arranging to finance thousands of inventories and that once these were built up employers would retain only maintenance groups. General Johnson said there is a respectable body of opinion that a great deal can be done to equalize employment throughout the year by requiring people to limit their inventories and not manufacture in advance over their actual orders.

The General pointed to the automobile manufacturing industry, which, he said, does not pile up much inventory. Formerly, he said, the industry did accumulate inventories by means of what was called financing winter production, running three or four months ahead on manufacturing. Business, therefore, he said was less distinctly seasonal than it is now.

The General said there are all kinds of schemes to prevent this development. One scheme, he said, is to require a reserve against seasonal employment with the idea that the less marked seasonal peaks are, the less tax there is to pay. These and other plans are being considered by the NRA, it was stated, which has three investigations under way.

Unemployment insurance is one subject being investigated. In the opinion of General Johnson the only feasible unemployment insurance is one that guards against seasonal layoffs, and this plan, it was pointed out, has distinct limitations.

A specific plan for unemployment reserve legislation is carried in a bill introduced last week by Senator Robert F. Wagner of New York. The bill proposes an excise tax upon all business concerns having 10 or more employees. The tax would be equivalent to 5 per cent of the total wages paid to employees receiving less than $250 a month. Sums set aside as unemployment reserves in accordance with state laws would be allowed to offset taxes. So far Wisconsin is the only state having such an unemployment reserve act, its law becoming effective July 1, 1934. In the absence of such a state law acceptable to the Secretary of Labor, employers would pay the tax, but payments would not be made in the event of unemployment to employees. Obviously the bill is framed to encourage states to pass unemployment reserve laws.

Meanwhile the NRA has shifted to a new policy to govern the handling of local trade and service industries. After several months of experience with business operations under codes and under the PRA, NRA has arrived at the conclusion that in many instances regional codes or Presidential agreements should be used to supplement national codes "in order to foster fair competition and eliminate unfair competitive practices between local trade and service enterprises." It was pointed out that most industries are organized nationally on a commodity basis, but service enterprises have less national integration and organization and respond to geographical rather than to commodity organization and administration. It is believed that this move will reduce the administrative load on NRA and tend to decentralize its activities.

NRA also has issued regulations requiring employers operating under approved codes to post the labor provisions of those codes conspicuously in their establishments. Under the regulations, issued by General Johnson in accordance with a recent Presidential Executive order, official copies of the hours and wage provisions of the code to which he is subject will be furnished to each employer. These official copies will include detailed directions for the proper filing of complaints of violations of the provisions. It was stated that posting of the provisions is designed not only to acquaint employees with their rights under codes but also to protect employers from complaints made in ignorance of code provisions and to protect faithfully-complying employers from chiseling competitors.

The Executive order, signed by President Roosevelt on Feb. 8, points out that Sec. 10-a of the Recovery Act prescribes a fine not to exceed $500 or imprisonment not to exceed six months, or both, for violation of any rule or regulation prescribed under the order.

With this heavy penalty facing them, unless they post labor provisions and live up to them, employers must register with their code authority within 30 days the number and locations of their shops, establishments or separate units. Thereafter the code authorities will furnish the required number of official copies of labor provisions, the copies to be prepared by the NRA. In cases where an employer is permitted by a modification, exemption or exception to pay lower wages or work employees longer hours than prescribed by the code for his industry or trade, certified copies of the modification, exemption or exceptions will be furnished for posting with the official copies of the code provisions.

Pontiac's Starter, Choke and Throttle Control Mechanism

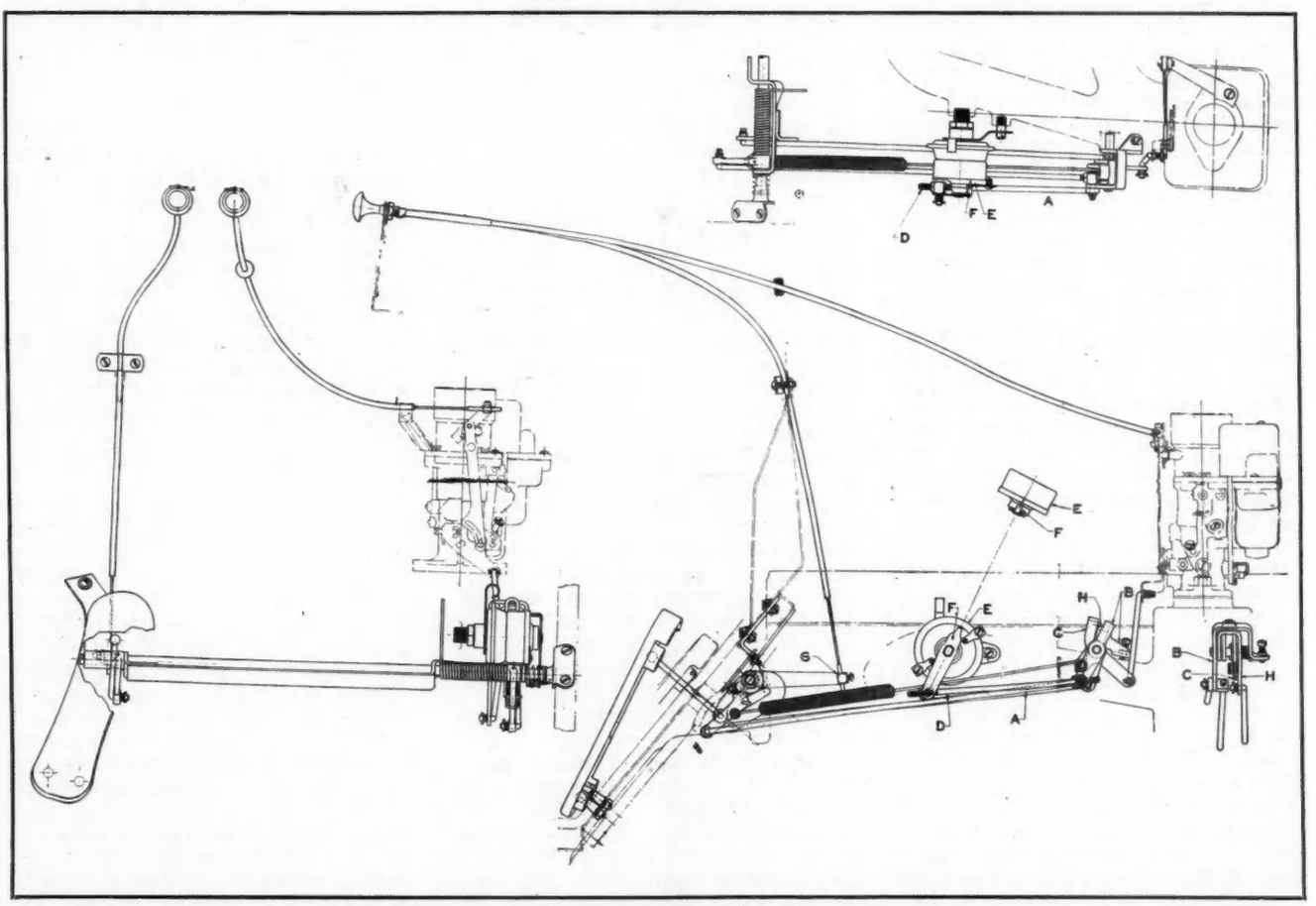
THE drawing herewith shows the arrangement of the starter, choke and throttle control on the new Pontiac. The pedal shown in the two lower views is the accelerator pedal through which the engine is started.

Pushing down on the pedal turns the shaft extending across the chassis around its axis. At the opposite end this shaft carries a lever connecting by a rod, A, to an intermediate lever, B, from which connection is made by link D to the switch lever F. It is evident that when the pedal is depressed, lever F is turned counter-clockwise on the switch body, E. The result is that a circuit is closed through the starter solenoid on top of the starter motor, which closes the starter switch and starts the motor.

Lever B is adapted to engage lever C, fulcrumed on the same axis. This lever really has three arms, the upper arm being engaged by an arm of lever B, the left lower arm of which has the throttle retracting spring attached to it, and the right lower arm of which connects through a short link to the throttle arm. From the throttle arm, a link, slotted at its lower end, extends up to the arm of the choke valve. The arm of the choke valve has direct connection to the choke control on the dash by means of a wire control.

The slot at the lower end of the link connecting the throttle and choke arms is so arranged that when the choke is fully closed for starting, the throttle is opened a certain amount, most suitable for starting purposes, while at the same time the throttle can be opened all the way with the choke in any position.

The engine can be started also by means of the hand throttle, which is mounted symmetrical with the choke button on the dash. In the left-hand view the button on the left is the throttle and that on the right the choke. The throttle acts through a control wire on a member consisting of a bent strip of metal with lever arms near its two ends, which is adapted to move angularly concentric with the control shaft. From the lever at the right-hand end, connection is made by a link to lever H, which is so arranged that when it is turned counter-clockwise it takes along lever C, from which there is connection by link to the throttle arm. By this arrangement the throttle can be opened all the way by means of the accelerator pedal without affecting the position of the throttle control button.



Pontiac starter, choke- and throttle-control mechanism

Improved Markets at Home and Abroad Combined to Increase British Production

AS has been its custom for a long time, *Engineering* of London during the early part of the current year again publishes a series of articles on "The Engineering Outlook," one installment being devoted to each of the principal engineering or mechanical industries. The instalment on "The Motor Industry" appeared in the issue of Jan. 26. It again shows a large proportional increase in the number of passenger cars manufactured in, and in the number exported from Great Britain and smaller proportional increases in the numbers of commercial vehicles manufactured and exported.

The number of people employed in the British automobile, cycle and aircraft industries increased from 196,301 in 1932 to 217,552 in 1933, while the number of unemployed registered in these industries decreased from 55,779 to 44,168. As compared with 1923, the employment in these industries increased 23.8 per cent. *Engineering* points out that even during the worst part of the depression, employment in these industries never ceased to increase, while during the past year a really large advance was made.

Statistics of production are taken from the figures of the Society of Motor Manufacturers and Traders and cover business years ending on September 30. These show that production of private passenger cars increased from 171,244 in 1932 to 220,775 in 1933. The recovery in automobile production which started in 1932 gained momentum during 1933 until at the end of that year production was 20 per cent greater than ever before in the history of the British automobile industry. The bulk of the increase has been in light-car production. Some years ago the popular "twelve" was succeeded by the "eight," which has now yielded first place to the "ten."

Exports of private cars and chassis therefor from the United Kingdom increased from 30,050 in 1932 to 41,028 in 1933. This in spite of the fact that exports to a number of markets were checked by quotas and tariff wars. The greatest gain occurred in the exports to Spain, which country took only 97 British cars in 1931, but about 2,000 in 1933. Most of this increase in exports is believed to be accounted for by the activities of the British Ford organization, which (as *Engineering* puts it), *now that the pound is no longer over-valued*, is a very powerful competitive force.

The total number of private cars registered in Great Britain increased from 1,148,000 in 1932 to 1,227,000 in 1933. In order to effect a net increase of 79,000 cars, 182,000 new cars had to be sold, which would indicate that 103,000 cars were scrapped in the course of the year. This number is small compared with the number of cars in use and is supposed to be somewhat illusory by reason of the fact that the lifting of the depression caused a good many cars which had been put out of commission, to be re-registered.

Imports of cars into Great Britain have been on a low level ever since the pound sterling was taken off the gold basis. The effect of the change in monetary policy is shown by the abrupt drop from 21,531 cars imported in 1929 to 9816 in 1930, and the even more phenomenal drop to 2,101 the following year. This proved to be the low-water mark, and the number of cars imported increased to 2,450 in 1932 and to 3,592 in 1933. How completely the status of Great Britain in international automobile commerce has changed during the past decade is shown by the following figures: From 1923 to 1933 exports of British private cars increased from 4,859 to 41,028; imports of private cars into Great Britain decreased from 22,067 to 3,592.

From Table I, giving the numbers of cars exported by the principal countries each year since 1930, it would seem that the depression in international automobile commerce reached its lowest depth in 1932. The total number of cars exported decreased from the all-time maximum of 527,726 in 1928 to a minimum of 116,150 in 1932 and rose the following year to 167,201, or by 44 per cent. It is noteworthy that the exports of each one of the countries listed increased in 1933 as compared with 1932. This would indicate that years of restricted buying have resulted in an accumulated replacement demand, which would augur well for 1934.

As already stated, production of commercial vehicles in Great Britain also increased during the past year, the number turned out being 65,508, as compared with 61,475 the previous

Table I—International Exports of Private Cars (Number)

Exports from	1930	1931	1932	1933
U. S. A.	153,088	90,000	50,000	69,502
Canada	28,842	9,000	5,000	14,840
United Kingdom	23,208	18,992	30,050	41,028
France	24,557	22,500	15,500	23,015
Italy	17,737	12,000	5,600	6,816
Other countries	5,000	2,000	10,000	12,000
Total	250,432	155,492	116,150	167,201

Table II—International Exports of Commercial Vehicles (Number)

Exports from	1930	1931	1932	1933
U. S. A.	84,452	52,000	25,000	40,658
Canada	15,711	5,000	3,000	4,040
France	6,601	3,500	1,800	2,219
Italy	3,000	1,500	291	537
United Kingdom	6,545	5,320	8,000	10,673
Total	116,309	67,320	38,091	58,127

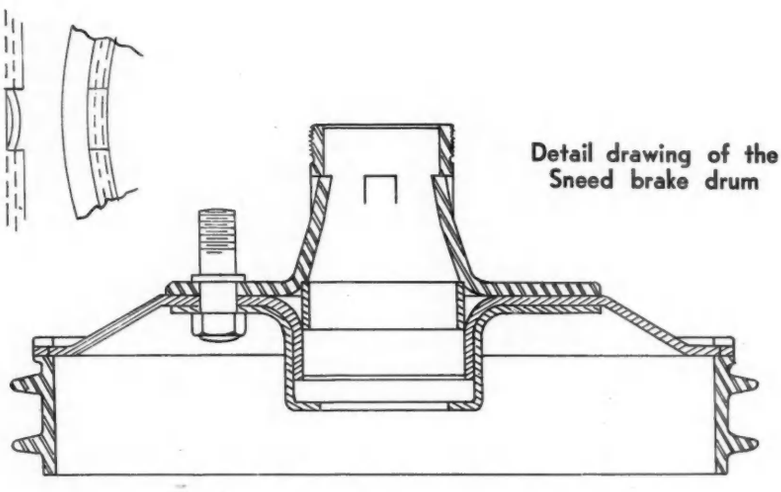
year. Both the home market and export fields shared in the increase, but the proportional increase in the foreign sales was much greater. Exports of British commercial vehicles and chassis increased from 8,000 in 1932 to 10,673 in 1933, while imports increased from 347 to 425. Registrations of commercial vehicles in Great Britain increased from 490,000 in 1932 to 505,000 in 1933. At the end of the past year production in the commercial vehicle field is said to have been more active than ever, and 1934 is expected to prove a record year.

Numbers of commercial vehicles exported each year since 1929 by the principal countries are given in Table II. Here again it appears that 1932 marked the bottom of the depression, because the aggregate exports for 1933 exceeded those for 1932 by 52 per cent. Each of the countries listed increased its exports of commercial vehicles from 1932 to 1933.

In concluding its survey of automobile production and trade during the past year, the publication cited strikes a rather optimistic note: "In such countries as China much of the opening up of backward areas, which during the nineteenth century would have been done by railways, will now be done by motor transport. During the worst of the depression, contracted purchasing power of individuals and heavy taxation imposed with the object of assisting the railways have retarded motor development all over the world. Motor production has declined, but the number of vehicles in use has not, indicating that a large demand exists for replacement of vehicles which would normally have been scrapped three or four years ago. Now that the vicious spiral of deflation has been checked, it may be confidently anticipated that this replacement demand will lift production quickly to high levels."

Sneed Brake Drum is of Two-Piece Design

NEGOTIATIONS are reported to be under way with two brake drum producers for the manufacture and distribution for original equipment of a new design of brake drum developed by John Sneed, inventor of the Steeldraulic brake. The drum, which is shown in the accompanying illustration, is of two-piece design, the drum ring being separate from the backing plate and assembled to it without rivets or bolts, or welds.



Detail drawing of the Sneed brake drum

As a result the drum ring can be made of any material desired. Manufacturing plans call for making the drum of strip steel, rolled and cut to length, butt welded and flash trimmed. Following this, a groove is turned near the inner edge of the drum ring, at the same time that the inside diameter of the drum is finished. In the cut-off operation on the strip steel, serrations had been punched in the drum, along the line of this groove.

The backing plate, which is shaped in the rough form of a cone, is finished with exterior splines matching the serrations in the drum ring. It is assembled to the drum by pressing the backing plate into place similarly to a welch plug. The splines thereby expand into the serrations, and the backing plate itself into the groove, the former to take the brake torque and the latter to take transverse stresses.

It will be noted that the splines on the backing plate themselves are convex-concave. When the backing plate is pressed into place and straightened this serves to lock the splines firmly in the serrations. For the design Mr. Sneed claims that the drum will stay more concentric than integral types. Uniform expansion of inner and outer sides are claimed, equalizing pressures on the drum and shoes. The drum is claimed to be lighter than current offerings, whether of composite or pressed steel design. The small backing plate diameter is pointed out as making it possible to form it integral with the hub, reducing costs, and keeping the drum more concentric with the wheel than through the usual forms of attachment. Chatter is claimed to be damped because vibrations in the rings would have to travel through the gap at the joint to get into the backing plate. Mr. Sneed claims that most chatter is due to amplification of vibrations in the backing plate.

While any type of material can be used for the drum ring, Mr. Sneed recommends the use of high silicon high manganese steel with 40-50 carbon, without heat-treat. This material, he says, is self-heat-treating.

Powdered Metals

Technologic research into the realm of the metallurgy of powdered metals continues to make good progress. The list of pure powdered metals now available commercially includes aluminum, bismuth, cadmium, chromium, copper, iron, molybdenum, nickel, silver, tantalum, tin, tungsten and zinc. By reconsolidating these powders interesting advantages and savings can be obtained. It affords a means for making combinations of the metals with nonmetallic material as well as exact alloys with one another.—*From Mining and Metallurgy.*

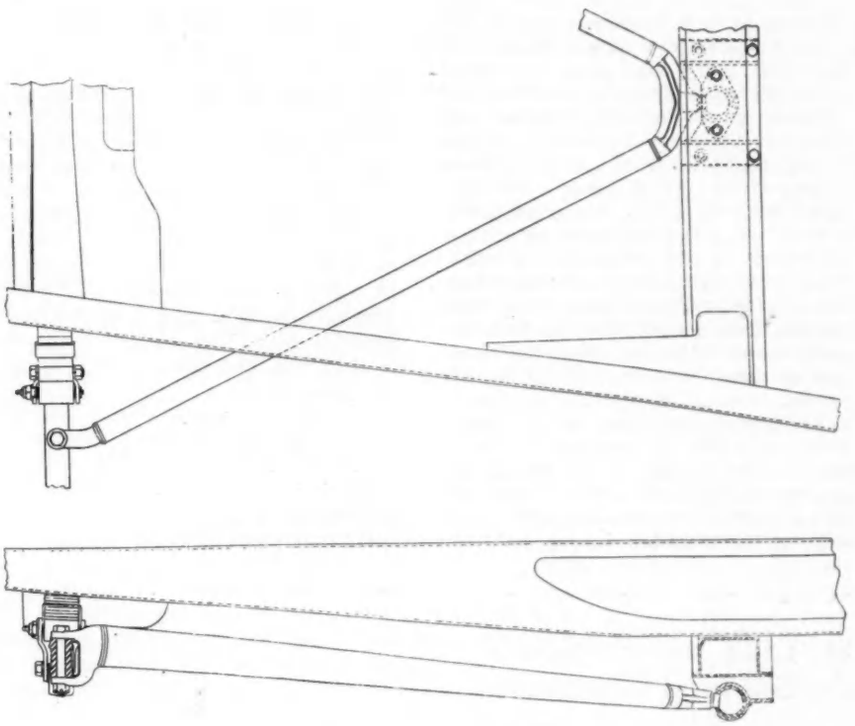
Continental Wishbone Construction

Correction

WE have been informed that statements made in a recent issue of *Automotive Industries* with regard to the wishbone type of radius rod for the front axle of the Continental 1934 model were incorrect in some respects. Two drawings of the construction are shown herewith, and its advantages are explained as follows:

"By replacing the radius rods with the wishbone construction, considerable improvement in riding is effected due to maintenance of almost constant caster. This suspension relieves the front spring of all twisting action. The spring acts as a spring only, permitting the leaves to slide freely on each other. No drive or braking reaction is taken by this spring, the wishbone taking these forces."

A further advantage of the new "wishbone" type radius rod is an improvement in steering due to a change in the conditions affecting the caster. By moving the attachment point of the radius rod back, the radii are lengthened. In this way the arc of up-and-down movement of the front axle about this attachment point is reduced, which in turn reduces changes in the caster.



Continental wishbone-type radius rod in plan and side views

General Electric Floodlights Lettering on Sides of Inter-City Trucks

The photographs show day and night views of flood-lighted trucks placed in service by General Electric Co. between Schenectady, N. Y., and Philadelphia. The trucks are equipped with 12-volt, 500-watt bus-type generators. Concealed floodlights illuminate the "General Electric" sign, and the trucks are provided also with two sets of headlights (one in reserve), ditch lights under the front bumpers, port lights on each side of the body in front, green running lights along the bottom of each side, two combination tail and stop lights, and two rear marker lights.

Production Delays Cause Estimated Drop of 18 Per Cent from '33 in January Sales

Ford in the Lead with Plymouth Second and Chevrolet Third Preliminary January Figures Indicate—Retail Domestic Dollar Volume Was $980,000,000 Last Year

PHILADELPHIA—January registrations of new passenger cars in the United States were approximately 18 per cent under last year, according to estimates made by *Automotive Industries* on the basis of returns from the first 14 states to report. A national total for the month of 65,200 is indicated by the estimates as compared with 79,821 in the same month a year ago. The estimates reflect the effects of the serious delays manufacturers encountered in getting their new model programs under way since reports from dealers indicate that the unfavorable January showing was due entirely to their inability to fill orders.

Ford, with production in full swing, went into first place with an estimated total for the month of 24,600 against 13,096 last year, a gain of 88 per cent. The estimates put Plymouth in second place with a total of 11,250 representing a loss of 3.5 per cent, while Chevrolet registrations are estimated to have dropped 74.5 per cent to 7,700.

Complete figures for 1933 new passenger car registrations in the United States now being available, *Automotive Industries* estimates that the 1,493,794 units sold at retail had a list price value of $980,400,000 against $843,000,000 for 1,096,399 units delivered in 1932. The increase in dollar volume amounts to 16 per cent as compared with a 36 per cent gain in unit. The average list price in 1933 was $655 against $769 in the preceding year.

December domestic retail volume totaling 58,624 units had a value of $40,400,000 as compared with a value of $35,000,000 for the 45,683 units sold in December, 1932, and November, 1933, volume of $63,000,000.

St. Louis Board Reports On GM Plant Complaints

Evidence of Interference With Chevrolet and Fisher Body Employees Is Found

ST. LOUIS—Acting on complaints against the Chevrolet and Fisher Body plants in this city, the local Regional Compliance Board on Tuesday of this week found that there was evidence of interference with right of the employees of these two plants to self-organization, and recommended that employees laid off last fall be given preference in rehiring without discrimination because of their union affiliation.

The findings and recommendations of the board dealt with charges made by representatives of United Automobile Workers Federal Labor Union at a hearing on Jan. 30, to which the companies did not send representatives.

In its findings the board said "there was evidence of employees of both companies urging, almost to the point of intimidation, the employee members or prospective members of the union to join the works council or works conference, and there is evidence that Mr. D—— used language of a threatening nature in urging some of the men to become members of the employees' association."

With reference to the rehiring of employees, the board recommends that "employees laid off in August, September and October, 1933, be reemployed and returned to their former jobs as promptly as possible, and in the opinion of this board these employees should be given priority without discrimination on account of their union affiliation. Fairness should suggest that employees who have given years of service must also have merit. This can work no hardship on the companies because, from the statements made to this board, there will be work for all."

Representatives of the United Automobile Workers Federal Labor Union, in presenting their complaints, estimated that 1000 union members, dismissed during the seasonal layoff, were not recalled to work, although the union asserted jobs were found for 500 new men when the plants recently resumed manufacture. The new men, it was alleged, included workers obtained through the CWA, men from other States and former employees with records of dismissal for inefficiency, union representatives asserted.

Copies of the board's findings were sent to the companies and the union.

Kramer Joins Buick

DETROIT — Harlow H. Curtice, president and general manager of Buick Motor Company, has announced the appointment of Elmer H. Kramer as personnel director, replacing Carl Storck, who has resigned. Mr. Kramer has been personnel director of AC, and last week was named president of the newly-formed Flint Industrial Executives Club.

NEW

Chrysler Reports 1933 Profit of $12,129,119

Resumes Dividend Payments With 25 Cents on March 31

DETROIT—Chrysler net income in 1933, after depreciation, taxes and other charges, totaled $12,129,119, equivalent to $2.78 per share, contrasted with a net loss after similar charges in 1932 of $11,254,232. A dividend of 25 cents a share has been declared, payable March 31.

The corporation's unit sales soared to a new high of 451,734, compared with the previous peak in 1929 of 450,453 and with 222,512 in 1932. Dollar volume rose to $238,675,951 last year, compared with $136,546,522 in the previous year. The percentage increase in unit sales was 103 and in dollars 75.

Average sales income per unit was $531 in 1933 as compared with $612 in 1932, the decrease being due to a big swing to the low-priced field which characterized last year's market.

Current assets on Dec. 31, 1933, amounted to $74,639,718, while current liabilities were $21,222,605, the corresponding figures at the end of 1932 being $65,681,796 and $16,395,380 respectively. Outstanding Dodge Bros., Inc., debentures were reduced during the year from $42,331,000 to $40,026,500.

After commenting on the remarkable record reflected by the financial statement, Walter P. Chrysler, chairman of the board, said:

"It is to be hoped that the tendencies to increase labor and material costs will not get out of hand, because the history of this industry clearly indicates that volume business, with accompanying large employment of labor and increased consumption of a wide variety of raw materials, arises from the ability to offer improved designs at low prices. If present developments can be held within the confines of this principle, the present improvement in business should gather momentum, and lead to permanently better times."

Gemmer Reduces Loss

DETROIT — Gemmer Manufacturing Co. reports for 1933 net loss after taxes, interest, depreciation and other charges of $32,117 as compared with a loss of $178,685 in 1932.

WS

Tire Output Increases 13 Per Cent in 1933

NEW YORK—Production of pneumatic tire casings increased 13 per cent in 1933 over the preceding year, according to statistics released this week by the Rubber Manufacturers Association. Shipments were up 10 per cent while inventories at the end of 1933 were 16 per cent larger than a year earlier.

Clingan Resigns From New Departure

BRISTOL, CONN.—Robert E. Clingan, for the past six years connected with the New Departure Manufacturing Co. as assistant sales manager and in other executive capacities, has resigned.

New Nash Directors Elected

KENOSHA, WIS.—Fred W. Sargent, president, Chicago & North Western R. R. Co., and Sewell Avery, president, Montgomery Ward & Co., have been elected directors of Nash Motors, succeeding F. W. Allen and S. F. Pryor.

Demand for 20% Pay Increase Latest Move in A. F. L. Battle to Organize Industry

Factories Report Workers Well Satisfied with Present Rates—Flint Labor Board Rules Against Federation on Charge of Importing Labor—Output Passes 11,000 Daily

By Athel F. Denham
Detroit Editor, Automotive Industries

DETROIT—Widespread and substantial wage increases in automotive parts and vehicle plants, or labor disturbances as an alternative, are possibilities which face manufacturers as a threat against a steady rise in automotive production. The American Federation of Labor last week stepped definitely into the picture by instructing all automotive locals in the country to demand a 20 per cent increase in wages. It is too early yet to tell what the effect will be, but several locals are reported to have refused to cooperate with the Federation in presenting the demand for a wage increase. A few scattered parts companies have increased wages, some 10 to 15 per cent, in agreement with union locals. Car producers, with the exception of Ford, have not revealed that they have taken action recently in increasing wage rates. The factories generally state that their employees are satisfied with present wage rates.

In this area the Federation seems to be centering on the Chrysler Corporation particularly, with General Motors in Flint also a major point of attack. The Flint labor board having ruled six to five against the Federation demand that a Government investigator be called in to look into the alleged importation of cheap outside labor, the Federation has appealed directly to the National Labor Board.

A strike threatened at the Bendix plants in South Bend had not materialized by Wednesday. Neither had any official demands been presented to the company by labor representatives agitating the situation.

Automotive producers in this area realize the dangers of the present unsettled labor conditions in their plants, but feel that the A. F. of L. is not sufficiently well organized at present, nor are local unions sufficiently strong financially to support a general strike of major proportions for any length of time. Even as recently as a week or so ago, the Federation ordered a small group of strikers in Flint to return to work. They had walked out, without presenting formulated demands, apparently as a protest against the stepping up of production schedules.

Meanwhile production continues at a merry rate. During the week ending Feb. 10, Cram estimates output at 65,143, an average of roughly 11,000 daily, and exceeding the 1933 record weekly output of 64,425 in the week ending July 29. With further expansion in production during the current week, an estimate for February of 275,000 units does not appear unduly optimistic despite the fact that the short month reduces the number of working days to 24.

Jobbers to Name District Committees on February 21

DETROIT—Organization meetings are scheduled to be held on Feb. 21 in each of the 50 administrative districts into which the country has been divided by the National Code Authority of the Wholesale Automotive Trade. An organization committee has been appointed in each district and each such committee is being furnished with rules and regulations for handling the organization program. At the organization meetings, the personnel of the permanent district administrative committees of seven will be selected. Wherever possible, district groups are being urged to make use of existing local or district wholesaler associations.

After district committees have been confirmed and approved by the Code Authority, they will receive procedure manuals outlining their duties and containing instructions for handling complaints. District administrative committees will have the right to authorize local administrative committees where desirable and procedure manual also will be issued for such committees.

Nominations for the permanent National Code Authority, which is to succeed the present acting Authority, close on Feb. 21.

Map showing administrative divisions set up by the automotive wholesale code authority

Chevrolet Delivered—Prices Are Upped $6

Move Follows Agreement With Dealer Authority

DETROIT—Increases of $6 in delivered prices by Chevrolet were made effective nationally this week, following the agreement between the company and the dealer Code Authority, which was reported by *Automotive Industries* last week. List prices are unchanged, as is the group price of $20 for bumpers, spare tire, tube and tire lock.

Confirming the agreement, the National Control Committee of the dealer code has issued a bulletin to State Advisory Chairmen which details the new delivery charges and indicates that Chevrolet list prices will be advertised both with and without the $20 accessory group. The bulletin follows:

All cars delivered with bumper, spare tire and tire lock will be listed and advertised with the selling price of these items included.

For example: Chevrolet Master Coach will be listed with above equipment..$605.00
If sold without above equipment..$585.00

Regular Chevrolet discount applies to above lists. In such instances where the car is purchased without equipment and the equipment is purchased later, same are to be sold on regular accessory list price basis.

Delivery charges to be passed on to the consumer will be made up as follows:

Freight — which is determined by the transportation companies.

All Taxes — determined by Government and other political bodies.

Delivery and Handling Charges — which include all items approved as applicable in such charges which in Chevrolet's case will be:

In those areas where cars are delivered by rail $13.50
In those areas where cars are delivered by trucks or driveouts $12.00

All other General Motors lines will be brought in harmony with Chevrolet.

As Chevrolet, in their contract, is acting as Administrator of the Cooperative Advertising Fund created by the $6.00 charges to the dealer and such other money which the company puts into it, which constitutes the dealers' local advertising fund, said charge cannot be passed on to the consumer as it is part of the dealers' expense of doing business.

On all such advertising, some effective method will be used to indicate such advertisement is local dealer advertising to distinguish it from national advertising.

While the group price of $20 for the accessories is less than these items would cost if purchased separately through the parts department, this is not considered to be in conflict with the dealer code, which requires that accessories be sold at list prices. The factories believe that such accessories are regarded generally as standard equipment and a group price for them is just as consistent, they feel, as a "group price" for the various parts which make up a complete automobile, such as engine, body, transmission, etc. Factories point out that individual list prices on such standard parts would total up to many times the actual list price of the vehicle. By grouping of accessories, it is pointed out that quantity manufacturing, purchasing and handling economies can be effected in the same manner as in the assembly of complete motor vehicles and that the factory is justified in passing this saving on to the consumer.

Campbell to Make Record Attempt Next August

WASHINGTON—Confirming a report in *Automotive Industries* of Jan. 27, the A. A. A. Contest Board announces that Sir Malcolm Campbell will bring the Bluebird racer to this country some time next August to make an attempt to set a new world speed record. The runs will be made on the Salduro Lake salt beds near Salt Lake City, Utah. The present record of 272 m.p.h. is held by Sir Malcolm, and was made at Daytona Beach.

Equipment Makers Win on Oil Code Revision

Ickes Ruling Removes Threat to Garage Equipment and Oil Selling Through Auto Jobbers

WASHINGTON—Rule 7 of the Petroleum Code has been revised by Administrator Ickes so that automotive jobbers who distribute both petroleum products and items of garage equipment which petroleum wholesalers were forbidden to handle by the Code, are no longer faced with the necessity of giving up one or the other class of merchandise to avoid violation of the Code. The revised rule thus corrects a situation which threatened to wreck the distribution organizations of producers of petroleum lubricants and of the prescribed items of garage equipment who sell through automotive jobbers.

As revised, the rule forbids the sale of new dispensing pumps, tanks, air compressors, air scales, reels and air towers, automobile lifts, greasing pits and racks, flood lights, yard lights, light poles or material for driveways, buildings and canopies by distributors, jobbers, wholesalers, refiners and retailers of gasoline, motor fuels, kerosene, burning oil or naphtha. It will be noted that the prohibition does not extend to wholesalers of lubricants. Consequently they are not limited by the new rule and, as most automotive wholesalers limit their sales of petroleum products to lubricants, the new rule takes care of the situation.

Greasing equipment or guns, lubsters, and other equipment or accessories for storage, display, vending, delivery, or consumption of petroleum products, which were included in the old rule, are not mentioned in the new one. These may now be sold by petroleum refiners and wholesalers provided their sale is not conditioned upon the sale of petroleum products, or vice versa. Moreover, they must be sold at published list prices and there must be no chiselling in the form of allowances or special credit terms. Leasing, loaning, and/or otherwise furnishing new equipment to consumers or sellers of petroleum products is prohibited in all instances.

Big Orders for Production Equipment Accompany Spurt in Motor Car Output

DETROIT—The Chevrolet Motor Co. has placed machine tool orders for new equipment at its gear and axle plant in this city and at its transmission plant in Toledo at an estimated expenditure of $1,500,000. This equipment, which is for delivery within 30 days, is to expand production in line with the schedules projected by the Chevrolet management during the spring season. Purchases for the local plant alone are said to number 300 machines.

Saginaw Steering Gear Division of General Motors Corp. has bought a considerable amount of new equipment to increase its output for General Motors car manufacturing divisions.

Chrysler Corp. has purchased machine tools for its local Jefferson Avenue plant, having expended about $300,000 for tooling up for assembly of front-end units for the Plymouth, Dodge and Chrysler six cars.

Copper Code Hearing Feb. 27

WASHINGTON—Production of copper will be regulated by voluntary agreements and surplus stocks will be withheld from the market, if the code for the copper industry is approved as it was proposed this week. Public hearings will begin on the code on Feb. 27.

Allotments based on the volume of current production and a plan for minimum sales prices are provided for in the proposed code. Regulation and allocation of sales also would be permitted.

President's OK on Trucking Code Launches Industry on Experiment in Self-Regulation

WASHINGTON — The protracted battle over the code of fair competition for the trucking industry came to an end on Feb. 10 when the President affixed his signature to it. The stage is now set for the industry to test the effectiveness of self-regulation.

The code regulates all trucks except those engaging in furniture moving, farm trucks and trucks subject to other codes. The exception in favor of the furniture movers was made pending a hearing to be held before June 15, 1934.

Administration of the code will be by a National Code Authority, members of which will be elected by Regional Code Authorities, a region consisting of three or more states. Provision also is made for the establishment of state and divisional code authorities. Paralleling this administrative organization will be one for handling labor complaints. At the top will be the National Industrial Relations Board and under it will be regional, state and divisional industrial relations boards.

All members of the industry are required to register within 30 days of approval, and for-hire members must file minimum rates and tariffs with state code authorities within 45 days. It is unfair competition to charge below these minimum rates which, in general, must be compensatory as established by uniform accounting, and members may not perform services not covered by rates schedules which they have filed.

Basic maximum hours are set at 40 hrs. for clerical workers; at 48 hrs. averaged over three weeks for others except drivers and helpers, with 54 hrs. maximum in any one week, and at 108 hrs. maximum in a two-week period for drivers and helpers and 192 hrs. maximum in a four-week period. Time and a third is to be paid for overtime in excess of 48 hrs.

Minimum wages range from 25 cents for unskilled labor in small towns in the South up to a minimum of 55 cents for skilled help in Northern cities of more than 2,000,000 population.

The National Code Authority is charged with developing a uniform system of accounts and with studying the desirability of a compulsory financial responsibility requirement.

The code also provides for agreements on fair trade practices among members of the industry in an area or in a vocation. Similarly agreements liberalizing the labor provisions may be entered into. Such agreements will be handled through appropriate state or regional authorities, and are subject to final approval by NRA.

When sent to the President, the code was accompanied by a report by General Johnson, in which he told the President that inasmuch as the code deals with a transportation service and not with a general industrial activity, it is considered that the wage and hour provisions are all that can be reasonably applied at this time. As a step toward adopting a shorter work day and week and improving the rates of pay and terms and conditions of employment, General Johnson pointed out that the industry is required to collect data and report findings and recommendations to him not later than Aug. 1, 1934.

Ray J. Fitness, Reo's new chief engineer

Ford Canadian Employment Near 1932 Midsummer Peak

EAST WINDSOR, ONT.—Employment by the Ford Motor Company of Canada, Ltd., is at the highest point since midsummer, 1932, Wallace R. Campbell, president, announced here. Total employees on the Ford roll in Canada at the close of the week were 4246. Of this total, 3790 were employed in the Border Cities and 456 in the Ford branch plants through the Dominion of Canada. Of those on the Ford roll in the Border Cities, 3685 were engaged in factory operations.

The East Windsor plants are working eight and three-quarters hours daily, five days a week. January pay roll distribution in Canada totaled $462,000. Of this sum 87 per cent was disbursed in the Border Cities. In addition to this wage distribution, Ford expenditures for materials and services required in manufacturing and allied operations totaled $1,075,000. Ford production in January, said Mr. Campbell, for export and domestic territories totalled 4239 cars and trucks. The original schedule on Jan. 2 called for a production of 3700 units. The increase in production during the month over the original schedule, which increase amounted to 13 per cent approximately, represented additional orders received during the month. The February schedule upon which the Ford plants are now engaged calls for production of 4365 cars and trucks, or some 18 per cent in excess of the original January schedule.

Congress Not Expected To Act on Rayburn Bill

Committee Will Await Eastman's Report On Road Transportation

WASHINGTON—The Rayburn bill to regulate motor carriers does not have the remotest chance of being passed at the present session of Congress. Revamping of the bill to moderate it would probably give it greater support. But, as it stands, even its proponents are apparently doubtful of its ability to stand a test before Congress and, while they have not so stated, it is clear they do not think its passage at this session is even a dim hope.

The hearings before the House Committee on Interstate and Foreign Commerce having been concluded, the bill is back before the committee. The latter will "mull" over it, possibly consider amendments in the light of testimony, and await any further action until receipt of the report of Coordinator of Transportation Joseph B. Eastman.

As coordinator, Mr. Eastman did not participate in the report of the Interstate Commerce Commission, which gave the Rayburn bill the Commission's blessing. Although it is reported that Mr. Eastman may submit his report about March 1, this is simply a rumor, however, and may be wide of the mark. Likewise the nature of his report is a matter of speculation, though the assumption is that tight regulation would be favored with Interstate Commerce Commission control.

Willys Names Butler

TOLEDO — Robert L. Butler, a leading sales figure in the Willys-Overland organization for many years, has returned to Toledo as vice-president in charge of sales for Willys Distributors, Inc., with offices in the administration building at the plant here.

He will have charge of sales of Willys 77's in the entire territory west of the Ohio River, or about two-thirds of the country. For some time he has been manager of the Willys-Overland Pacific assembly plant.

Hesselman Type Motors in New Allis Tractors

MILWAUKEE — Production of a new line of industrial tractors equipped with Hesselman heavy-oil, spark-ignition engines has been announced by the Allis-Chalmers Mfg. Co. The engines were developed in collaboration with the Waukesha Motor Co., who control the Hesselman American rights. Two models have been developed, both of the tracklayer type, one weighing 11,200 lb. and developing 48 drawbar hp., the other weighing 23,000 lb. and developing 76 drawbar hp. Engines will be manufactured at the West-Allis (Wis.) plant of the company and shipped to Springfield, Ill., where all heavy-duty tractors of the Allis-Chalmers company are manufactured.

Toledo Employment Soars

TOLEDO—Under the spur of automotive production Toledo plants are rapidly gaining in employment. Fifty-one plants here last week put on 1388 workmen, to a total of 12,159 employees.

Libbey-Owens-Ford Glass Co. and the Spicer Manufacturing Corp., two large plants here not included in the weekly report, also are operating near peak. Libbey-Owens-Ford has more than 5000 at work and the Spicer plant now has 1850 full-time and 300 part-time workers.

Much of the gain during the last week is attributed to Chevrolet Motor Ohio Co., which has recalled many of its workmen, building its force from 2000 up to about 2500 in the last week.

Auburn Export Orders Reach New Peak

AUBURN, IND.—Unfilled orders in the export department of the Auburn Automobile Company here are at an all time record for any similar period, according to W. H. Beal, president. Unfilled export orders on hand as of Feb. 10, according to Mr. Beal, are greater than the entire export sales of the company for 1933.

Traffic Managers Meet

DETROIT — Traffic managers of automobile companies met here on Feb. 16. Current legislative proposals, the recent report of the Federal Coordinator of Transportation and a variety of rating proposals and decisions of the Interstate Commerce Commission affecting automotive shipments were considered at the meeting.

Brumbaugh Leaves White

CLEVELAND—A. K. Brumbaugh, commercial engineer, the White Co., has resigned and his new address is at the Cleveland Club.

Mr. Brumbaugh is a vice-president of the Society of Automotive Engineers representing the Motorcoach,

A. K. Brumbaugh

Motor Truck and Rail Car Activity and was formerly vice-president representing the Production Activity. Prior to joining the White Co. in 1927, Mr. Brumbaugh was connected with the Autocar Co. in the capacities of assistant engineer and electrical engineer.

Modine in the Black

RACINE, WIS.—Modine Mfg. Co. reports 1933 net profit of $60,959 after all charges, including loss of $45,251 on the sale of securities, which contrasts with net loss of $165,652 in the preceding year.

Ford's Building at the 1934 Century of Progress Exposition

"We want our exhibition to be just as instructive as it is possible to make it," said Henry Ford to Rufus C. Dawes (both shown in circle). "I am very enthusiastic over the project," said Dawes to Ford, "and am confident it will mean a major contribution to the success of the 1934 Fair." Edsel Ford stands back of a model of the building.

"MAGNIFICENT" is the word used by Rufus C. Dawes to describe the scope of the Ford plans for participation in the 1934 version of a Century of Progress in Chicago.

The Ford exhibition will be housed in a building 860 ft. long on an 11 acre plot. A circular structure 210 ft. in diameter will form the dominant section of the main building. It will house Ford's historic "Drama of Transportation" depicting the development of passenger vehicles from early Egyptian chariots to modern automobiles. All models of Ford cars built since 1903 will be represented. In an open court will be placed a large, electrically lighted and propelled globe "The Ford World," which will show the location of all branch plants, forests, mines and factories from which materials and supplies are drawn.

Ternstedt Gets Safety Trophy

DETROIT — Ternstedt Company has been awarded the M. L. Briggs industrial safety trophy for the last half of 1933, against 84 competing plants. The Ternstedt plant operated 918,504 man-hours without an accident resulting in the loss of working time.

The commercial car and truck drivers of the Briggs Manufacturing Company and the Murray Corporation of America won the Fitzsimmons fleet trophies for having been involved in no automobile accidents during the six months' period.

AC Appoints Mann

DETROIT—Fred S. Kimmerling, president and general manager of AC Spark Plug Company, has announced the appointment of George Mann as personnel director of AC. Mr. Mann is one of the AC veteran executives. Charles F. Dye has been appointed comptroller for AC, succeeding W. E. Ross. Mr. Dye comes from the Detroit office of General Motors. Mr. Mann replaces Elmer H. Kramer, who has been appointed personnel director for Buick.

Ex-Cell-O Cuts Loss

DETROIT, Feb. 13 — Ex-Cell-O Aircraft & Tool Corp. has reported a net loss of $63,118 for year ended Dec. 31, 1933, compared with net loss of $167,557 during 1932. Current assets as of Dec. 31, 1933, totaled $703,991 and current liabilities were $241,011, against $585,655 and $230,414 respectively on Dec. 31, 1932.

Peat Is A.S.A. Editor

NEW YORK—Leslie Peat has been appointed editor of Industrial Standardization and Commercial Standards Monthly of the American Standards Association. Mr. Peat was for several years managing editor of *Automotive Industries* and more recently was connected with Standard Statistics, Inc.

Bert Conway Promoted

TOLEDO—Bert Conway, for several years assistant manager, has been promoted to general manager of the Chevrolet Motors Ohio Co., here, succeeding S. A. Woodmancy, who has been transferred to the Chevrolet headquarters in Detroit.

Mooney Sails for Europe

NEW YORK—James D. Mooney, vice-president of General Motors Corporation in charge of overseas operations, sailed on Feb. 14, for a three months' visit to the corporation's plants in Europe.

Sure! Let's Junk It All

A PROPOSAL to dismantle high production rolling machinery such as continuous strip mills, to create more employment, has been made by 42 unions of the Amalgamated Association of Iron, Steel and Tin Workers, the government to subsidize the operation with $150,000,000. Although the idea is not being taken seriously, it is interesting to speculate on the effects of a general application of the kind of "thinking" it represents.

Suppose, for example, it were decided to junk all the machinery used to make automobile bodies and revert to hand-hammering them out of sheets. At the recent shows there were many such hand-hammered bodies because of production delays and it is reported that they cost in excess of $4,000 each to produce. If automobile bodies cost $4,000 each, and other parts of the car in proportion, how many cars would the industry sell annually, and how many workers would it employ?

Hudson Schedules Meetings

DETROIT—Within the next few weeks the Hudson Motor Car Company will begin a series of regional and local meetings in all parts of the United States to acquaint Terraplane and Hudson distributors and dealers with the company's new field service development program. This work will be conducted by Hudson's recently established field service development department, of which T. H. Stambaugh is manager.

MotoMeter Merger Approved

TOLEDO—Stockholders of Electric Auto Lite Co. at a special meeting Wednesday, approved merger plans and increase in capital stock from 1,000,000 to 1,500,000 shares authorized common to provide for exchange with MotoMeter Gauge and Equipment shareholders.

Dingley and Haig Testify

WASHINGTON—Bert Dingley and Daniel C. Glasbrenner, officials of the Marmon-Herrington Co., and Norman C. Haig, General Motors, are reported to have testified on Feb. 8 before the local federal grand jury investigating the placing of army contracts.

Economists to Study Open Price Associations

WASHINGTON — More than a score of the country's outstanding economists and marketing experts—many of them critics and some of them avowed opponents of NRA—have been invited to join the Administration in the study of open price associations now being conducted by Division Administrator A. D. Whiteside and Col. Robert H. Montgomery, chief of the research and planning division.

The invitations were extended, at the suggestion of National Recovery Administrator Hugh S. Johnson, by Leon Henderson, himself an outspoken critic of certain NRA policies, recently named by the General to act as a special assistant to observe and advise on code operation from the consumers' standpoint.

Lycoming Reports Loss

WILLIAMSPORT, PA.—A net loss of $592,996 after all charges but before preferred dividends amounting to $70,930, is reported by the Lycoming Manufacturing Co. for the year ended Nov. 30, 1933. This compares with a loss of $456,112 in the previous fiscal year. Net sales in the last fiscal year were $2,117,884 against $3,906,977 in the previous year.

Current assets on Nov. 30, 1933, were $1,606,348 against current liabilities of $187,545, giving a working capital of $1,418,803. This compares with working capital a year earlier of $1,829,668.

New "Esso" Break-in Oil

NEW YORK—Standard Oil Company of New Jersey has announced a new product, Essolube Break-in Oil, which will be marketed exclusively through motor car dealers and automobile repair shops. The new product will not be sold through the service stations of the company and its affiliates, the Standard Oil Company of Pennsylvania, Standard of Louisiana and Colonial Beacon Oil Company.

Ross Profit Larger

LAFAYETTE, IND.—A net profit after all charges and taxes of $139,091 is reported on 1933 operations by the Ross Gear & Tool Co., as compared with a profit of $123,680 in 1932.

Shaler Earnings Rise

WAUPUN, WIS.—Shaler Co. had net income of $34,534 in 1933, compared with $6,183 in 1932, according to its annual report. Net sales in 1933 were $700,716, against $607,237 in 1932. The balance sheet shows the concern in a strong position, with current assets 5 to 1 of current liabilities.

Business in Brief

Written by the Guaranty Trust Co., New York, exclusively for Automotive Industries

General business activity last week showed further improvement, and the level is gradually approaching that in 1931. The seasonal increase as spring approached was absent during the last three years, but this year there are some early indications of this seasonal upturn. Some additional advances were made in the basic industries, most notable of which were in the automobile and steel industries. There was no decline in retail buying; and wholesale trade was active, with considerable interest being displayed in trade exhibits.

Car Loadings Continue Up

Railway freight loadings during the week ended Feb. 3 totaled 564,098 cars, which marks an increase of 2,532 cars above those during the preceding week, an increase of 78,039 cars above those a year ago, and a decrease of 9,825 cars below those two years ago.

Power Production Increasing

Production of electricity by the electric light and power industry in the United States during the week ended Feb. 3 was 12.5 per cent above that a year ago.

Lumber Firm

Lumber production and new business during the week ended Feb. 3 were somewhat lower than during the two weeks preceding, although shipments were heavier than for any week so far this year.

Bankruptcies Halve 1933 Mark

Commercial failures in the United States during January, according to Dun & Bradstreet, Inc., numbered 1,364, as against 1,132 during the preceding month and 2,919 during January, 1933. The liabilities involved in the January failures amounted to $32,905,428, as against $27,200,432 in the preceding month and $79,100,602 a year ago.

Oil Production Below Allowable

Average daily crude oil production for the week ended Feb. 3 totaled 2,121,650 barrels, which was 61,350 barrels below the allowable figure. The current level compares with 2,222,750 barrels for the preceding week and 2,028,250 barrels a year ago.

Commodity Prices Rise Slowly

Professor Fisher's index of wholesale commodity prices during the week ended Feb. 10 stood at 73.2 as against 72.8 the week before and 72.5 two weeks before.

Federal Reserve Statement

The consolidated statement of the Federal Reserve banks for the week ended Feb. 7 showed decreases of $10,000,000 in holdings of discounted bills, of $14,000,000 in holdings of bills bought in the open market, and of $2,000,000 in holdings of government securities.

Chevrolet Workers Average 69c. per Hr.

DETROIT—That the average wage paid Chevrolet workers approximates 69 cents an hour as compared with a code minimum of 43 cents was revealed here by M. E. Coyle, general manager of the Chevrolet Motor Company. He also announced that on Feb. 8 the company turned out 3349 completed passenger cars and trucks. Plants are now headed for capacity operation as fast as manufacturing processes will permit, with prospects for maintaining peak production well into the spring months, Mr. Coyle stated.

Present payrolls of over 55,000 people compare with 33,000 a year ago, while hourly rates are 20 per cent above those of a year ago and equal to those in effect in 1929.

As of Jan. 31, Chevrolet dealers had on hand 108,500 orders for retail delivery of 1934 passenger cars and trucks.

G. M. Employees Double Savings Fund Investment

NEW YORK—General Motors Corporation is distributing $8,499,670 and 56,433 shares of General Motors common stock (approximate market value, $2,250,000) to 28,393 of its employees who invested in the Savings and Investment Fund Class of 1928 which matured Dec. 31, 1933, Alfred P. Sloan, Jr., president of the corporation, announced on Wednesday of this week. Of the total disbursement, $5,084,485 represents the employees' own original savings, and the balance represents interest and investment fund benefits paid by the corporation. The payment gives to each participant more than double the amount originally invested in 1928.

Ford Reports Disbursements Of $41,000,000 in January

DEARBORN—More than $41,000,000 was disbursed by the Ford Motor Company in January in payment of wages and purchase of materials, it was disclosed this week at the company's home offices.

The disbursements were at the rate of more than $1,750,000 during each business day in January.

The Ford company's disbursements for wages during the month totaled $7,500,000. This was 50 per cent greater than disbursements for this purpose in January a year ago. Of the total $5,500,000 was in wages paid out in the immediate Detroit area.

Expenditures for materials totaled $33,500,000 during the month, it was said. This compared with $8,500,000 paid for this purpose in January, 1933.

McKim Heads New MEWA Parts Distribution Dept.

CHICAGO—Don McKim has been appointed head of the new parts distribution department of the Motor and Equipment Wholesalers Association. Joining the automotive industry as an engineer, Mr. McKim has more recently been prominent in merchandising, sales promotion and advertising work; in fact, the major portion of his automotive career has been in those fields. At different times Mr. McKim has occupied sales executive positions with Continental Motors and Federal Truck.

Wiggins Joins N.S.P.A.

DETROIT—J. L. Wiggins has joined the field staff of the National Standard Parts Association, according to an announcement by E. P. Chalfant, executive vice-president.

Mr. Wiggins leaves a position as Chicago district manager for the U. S. Electrical Tool Co. to become connected with the N.S.P.A. He was previously connected with the Aluminum Industries. In 1930 he left Aluminum Industries to act as special merchandising representative for Chilton Co. His work with the N.S.P.A. will augment the present work of A. R. Sandt, director of marketing research, and Verne W. Schlieder, field secretary.

Auto Buying Continues to Boost Steel Output

Second Quarter Flat Steel Prices Still Expected to Increase

NEW YORK—With a further gain of approximately 6 per cent reported in the steel industry's operating rate for the current week by the American Iron and Steel Institute, the volume of steel being delivered to automotive consumers continues to increase from day to day. Moreover, backlogs of sheet and strip mills give reasonable assurance of the maintenance of satisfactory operating rates in finishing mills in March.

Some of the Mahoning valley strip mills are operating at a much higher than the average rate. Full-finished automobile sheets are among the leaders in point of activity. One of the leading interest's subsidiaries has a good run on a special grade of light plate steel for body stock.

Automotive alloy steel specifications as well as those for cold-finished steel bars are coming through in large numbers. A $1 per ton reduction in the filed price of a Chicago mill on hot-rolled strip, effective today, was made solely for the purpose of equalizing Chicago and Pittsburgh prices, and expectation of higher prices for all flat steels in the second quarter has undergone no change.

A 45 per cent decrease in the report of January shipments of the leading interest is certain to be followed by a heavy increase in shipments this month. Steel producers were not so much perturbed as amused by the proposal of 42 unions of the Amalgamated Association of Iron, Steel and Tin Workers that the Government appropriate $150,000,000 as a subsidy to the steel industry to dismantle high production rolling machinery, such as continuous strip mills, to create more employment.

Pig Iron—Sales to automotive foundries in the Middle West are running approximately 20 per cent ahead of what they were a month ago. Code prices are being strictly adhered to in all transactions.

Aluminum—Brisk automotive demand has brought about a further rise in prices for secondary metal, No. 12 being advanced ½c. to 15½ @ 16c. This price range denotes a 25 per cent advance over early January quotations and compares with an 8c. market a year ago.

Copper—Progress in the adoption of a Code to the point where it will be the subject of a public hearing on Feb. 27, did not affect the market when it reopened on Tuesday, electrolytic continuing to be offered at 8c., delivered Connecticut Valley point.

Tin—Straits tin opened the week at 51.65c., a fraction higher than last week's close.

Lead—Quiet and firm.

Zinc—Steady and unchanged.

Former Officials May Not Appear Before NRA

WASHINGTON — Former officials or employees of the National Recovery Administration may not appear before it in behalf of any industry or trade with which their former governmental duties may have put them in contact. This ruling has been made by General Johnson as a precaution against scandal or charge of favoritism. "Appearance is defined as including, in addition to being received in person, communication by writing or otherwise." In issuing the order General Johnson said that it carried no implication of improper conduct.

Studebaker Exports Boom

SOUTH BEND—Studebaker passenger car exports in January were more than 150 per cent ahead of last year, while foreign sales of trucks showed a gain of 457 per cent over January, 1933, according to Arvid L. Frank, vice-president and general manager of the Studebaker Pierce-Arrow Export Corp. Truck exports in January were the largest for that month in Studebaker history and were exceeded by only two other months on record.

Motors Set the Pace In Dividend Recovery

NEW YORK—Automobile and automobile accessory companies contributed $25,000,000 of the $81,000,000 in the rate of common dividend payments found by Moody's in a study of 600 companies. This increase represents the gain in the annual rate between the low point on June 30, 1932, and the end of January of this year.

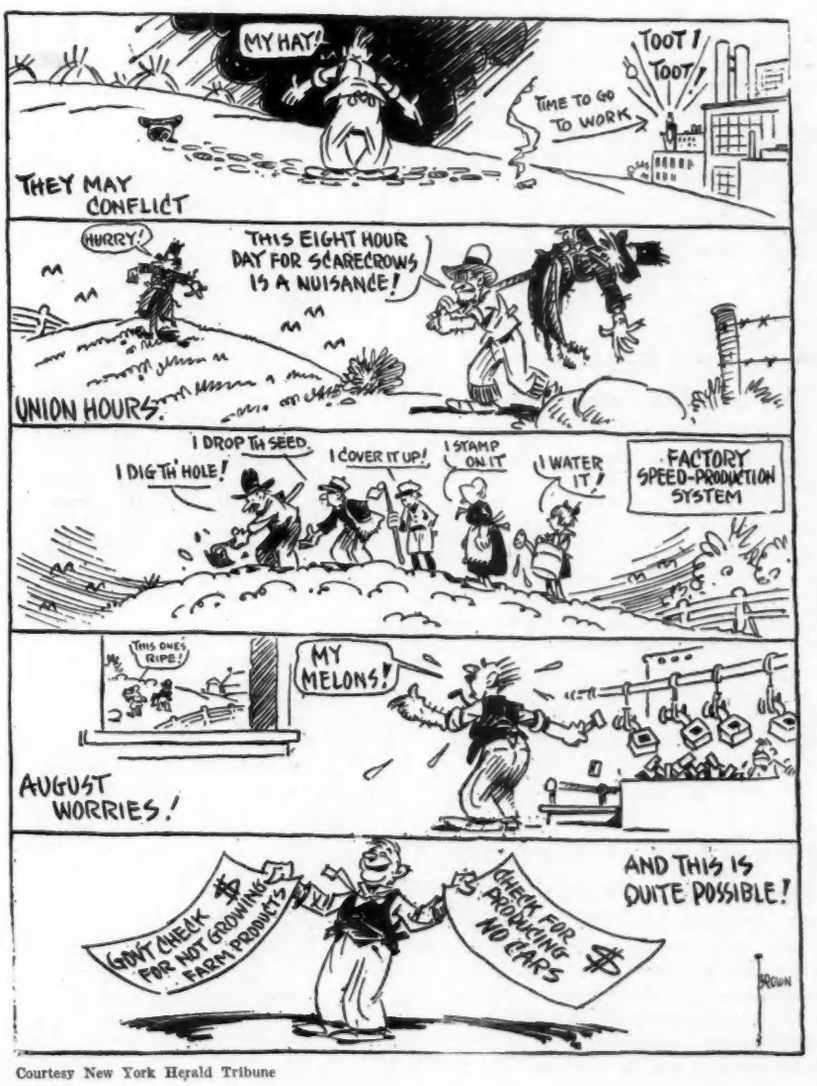
On March 31, 1930, the 600 companies were paying cash dividends at the rate of $2,685,000,000 annually. On June 30, 1932, the annual rate of disbursements had sunk to $958,000,000. Subsequently it recovered to $1,039,000,000 by Jan. 31, 1934.

Mauro in Detroit

DETROIT—John F. Mauro, European sales manager of the Hupp Motor Car Corporation, is in town for a two-week visit at the factory.

Henry Ford's Combination Farm and Factory Plan

(Copyright 1934, New York Tribune, Inc.)



Courtesy New York Herald Tribune

New Rubber Control Plan Is Anticipated

British, Dutch and French Reported to Have Agreed on Need for Output Restriction

PHILADELPHIA — Restriction plans aimed at maintaining rubber prices above "cost of production" again are under consideration with British and Dutch interests in agreement that they should be put into effect. The other principal factor in the situation is France controlling Indo-China, and it is reported to be receptive.

What effect such plans might have on rubber and tire prices can only be conjectured until the details of control are revealed. It will be recalled that some years ago while the ill-fated Stevenson plan was in force rubber passed the dollar mark. This plan finally collapsed because it applied only to British producing areas, expansion of production in other territories, notably those controlled by the Dutch, finally wrecking it. Present plans apparently recognize this weakness, and seek the cooperation of all major producing nations.

S. Figgis & Co., London rubber brokers, in their annual review of the rubber market, commenting on proposed control plans, say: "We believe it is the wish of the British Government, as well as the Dutch, that restriction should take place, if the other governments concerned come into the agreement, the principal one being the French Government, controlling Indo-China. We understand that this has been arranged. . . ."

Chevrolet Employs 2257 at Janesville

JANESVILLE, WIS.—Employment in the Chevrolet and Fisher Body plants in Janesville, Wis., recently reopened after being idle more than a year, reached an all-time high during the week of Feb. 11-17 when 300 factory workers were added to the payroll, bringing it to 2257 persons. The Chevrolet plant is operating with two shifts a day, 40 hr. a week, and the production schedule of passenger cars, which started at 250 per day, is gradually being stepped up and is expected to reach capacity of 650 cars a day within two weeks.

Big Profit Reports Causing Labor Unrest, Bendix Says

WASHINGTON—Reports of excessive profits made by Bendix Aviation and Bendix Products are causing unrest among the employees of these companies, Vincent Bendix told the House Naval Committee on Monday of this week, when he testified at the inquiry into aviation profits. He said that he was anxious to return to South Bend because a strike was threatened on Wednesday.

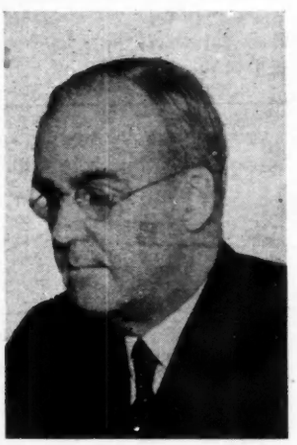
As president of the Pioneer Instrument Co., he testified that it lost $52,000 in 1930, $152,000 in 1931, $118,000 in 1932 and $54,000 in 1933. Mr. Bendix said that he took no salary from the company, but that his salary from other organizations totaled $46,000 annually.

He charged that the Navy's policy of buying instruments from small companies with low expenses was a threat to the older manufacturers, such as Pioneer. "We could stop some of the loss by holding up research work," he explained.

Goodyear Raises Tire Prices

AKRON—Goodyear announced early this week a 3 per cent increase in tire prices. Subsequently Goodrich stated that it would not follow suit, while F. A. Seiberling, president of the Seiberling Rubber Co., is reported to have attacked the increase on the ground that it fell 17 per cent short of being enough.

Weir of Weirton



Ernest Tener Weir

"The answer today," said steelman Weir last week to Edmund Gilligan of the New York Sun, "is that we have peace at Weirton. Perfect peace. The representation of the workers is entirely in their hands. We have successfully settled over 400 cases in the last year by this method. The company has no control over the union. It wishes to have no control. It is asinine to say that such a thing could be done. You would soon hear of it. The peace would be ended."

Dodge Named Manager Of Graham Export Co.

DETROIT, Feb. 13—Harry D. Dodge, for many years associated with the Graham-Paige Motors Corp. of Detroit, and for the past two years managing director of Graham-Paige Motors of Canada, Ltd., Walkerville, Ont., has been appointed managing director of the Graham-Paige International Corp., according to Robert C. Graham, president of the latter organization. Mr. Dodge is well known abroad, having spent many years in Europe in automotive export business.

In addition to his new duties he will continue as managing director of the Canadian Graham organization.

Mr. Dodge joined the Graham organization in 1922 and in 1924 introduced Graham trucks in Europe and South Africa. In 1925 he became associated with Dodge Brothers' operations in England, and in 1926 became managing director of Dodge Brothers Britain, Ltd., in London, later becoming European director of Dodge Brothers. In 1929 he rejoined the Graham organization, and spent two years as general manager of the European organization, with headquarters in Antwerp. In 1932 he returned as managing director of Graham-Paige Motors of Canada, Ltd., the position which he will retain in addition to his new duties.

A. R. Glancy Not Connected With Glancy Malleable Co.

In our issue of Jan. 20 we carried an item under the heading "Receiver for Glancy," in which it was reported that a receiver had been appointed for the Glancy Malleable Corp., Waukesha, Wis. The item was correct, but we are informed that the headline has caused A. R. Glancy considerable personal embarrassment. We regret this very much and wish to make it clear that Mr. Glancy personally is not in receivership, nor has he been connected with the Glancy Malleable Corp. for three and one-half years.

As his many friends will recall, Mr. Glancy was at one time president of the Oakland Motor Co. He is at present a member of the National Recovery Administration, with headquarters in the Department of Commerce Building, Washington.

Purvis Joins Chek-Chart

CHICAGO—J. A. Purvis has been appointed associate editor of *Chek-Chart* and will work in collaboration with J. Howard Pile, editor. Mr. Purvis was formerly with the Texas Co. and subsequently became technical editor of *Automobile Trade Journal*. More recently he has been advertising manager of the Weaver Mfg. Co.

Wage Rates at 1929 Peak As Motor Employment Rises

DETROIT—Current reports to the Code Authority governing the Automobile Code show a large increase in employment in plants of members of the National Automobile Chamber of Commerce in the Detroit area (including Pontiac, Flint and Lansing).

On Feb. 1, 1934, these plants employed 162,971, as compared with 103,071 on the same date last year. The recent increase in weekly average working hours permitted under the code will make it possible for employees in the industry to average a total of working hours for the year approximately equal to the annual average in 1929, the peak year, provided present business conditions are maintained. Hourly wage rates again approximate the peak levels of 1929.

An investigation of recently quoted rumors of code violations, consisting of attempts to split the weekly wage payment into cash and check to conceal overtime, disclosed such rumors to be without foundation, so far as member plants are concerned.

Metals Congress in N. Y.

CLEVELAND—The National Metal Congress and Exposition will be held in New York City during the week of Oct. 1-5, 1934, in the Commerce Hall in the Port of Authority Building. All exhibits will be located on one floor, with 160,000 sq. ft. of space available. There will be no restrictions as to floor loading or operation of exhibits.

Bantam Appoints Hellstrom

SOUTH BEND—A. S. Hellstrom is now representing the Bantam Ball Bearing Co. of this city in the Youngstown, Cleveland and Wheeling districts. His headquarters are at 1625 Ohio Avenue, Youngstown, Ohio.

U. P. Takes Delivery On Streamlined Train

CHICAGO—Hailed as tomorrow's train, the Union Pacific's streamlined train left the Pullman shops on Monday of this week and became a part of the railroad's rolling stock. U. P. Board Chairman Harriman said that his railroad had ordered three larger trains of similar design with the objective of cutting the Chicago-Pacific Coast schedule by 20 to 24 hours, which would reduce the run to one of 32 to 36 hrs. The train left on Tuesday for Washington where it is to be inspected by President Roosevelt and Coordinator Eastman.

The train is said to weigh 160,000 lbs., about the weight of a standard Pullman, will carry 116 passengers and has diesel-electric drive. On break-in test runs, it has attained speeds of 110 m.p.h. In service, the train will cruise at 90, with a maximum of 110 m.p.h.

Automotive Oddities—By Pete Keenan

Write us if you know an Oddity

THE DORMITORY OF TWO FARM BOYS MAKING THEIR WAY THROUGH THE FRESHMAN CLASS AT PURDUE COLLEGE.
PURDUE
DAY & KNIGHT GARAGE
Sign in Portland, Ore.
THE TIRES WEIGH MORE THAN THE CAR ON L.E. PRESTONS AUTOMOBILE Los Angles
MICHAEL OKOLO 10 YEARS OLD IS AN EXPERT AUTO DRIVER. Amherst Mass.
LAWRENCE OF ARABIA
(NOW AIRCRAFTSMAN SHAW)
DEFIED DEATH IN A SPEED BOAT HE INVENTED WHILE LIVE BOMBS WERE DROPPED ON HIM TO PROVE TO THE BRITISH ITS VALUE FOR AIRCRAFT PRACTICE

Vote to Form Low-Priced Airplane Corporation

NEW ORLEANS — Independent aircraft manufacturers met here this week with members of the manufacturing section of the Aeronautical Chamber of Commerce of America and passed a resolution to form a corporation which might become a producing organization to work with the Government in the production of the low-priced plane proposed by Eugene L. Vidal, Director of Aeronautics. It was said, however, that the industry was not required by the resolution to begin the building of planes of the type proposed. The manufacturers were here in connection with the Pan-American Air Races.

New Code to Promote Uniform Road Signals

WASHINGTON — Uniform traffic signs and signals throughout the country are to be furthered through adoption of a standard code of traffic control devices being worked out jointly by the American Association of State Highway Officials and the National Conference on Street and Highway Safety of which Secretary of Commerce Daniel C. Roper is chairman. This code is under preparation by a joint committee appointed by the above organizations at present in session at the Bureau of Public Roads.

ASTM Committees To Meet March 5

PHILADELPHIA — A.S.T.M. Standing Committees will hold their 1934 Spring Group Committee Meetings in Washington, D. C., beginning Monday, March 5, and extending through Friday, March 9. In conjunction with these will be held the 1934 A.S.T.M. Regional Meeting, scheduled for Wednesday, March 7, at which will be held a Symposium on Outdoor Weathering of Metals and Metallic Coatings. The meeting will be held in the Wardman Park Hotel.

Farmer Greatest Beneficiary From Federal Spending

NEW YORK—"The largest single beneficiary from the huge Government spending program, for which $6,357,000,000 already has been appropriated, will be the farmer, who will receive a total of $1,833,000,000 from all sources in the current fiscal year ending June 30, 1934," declares Moody's Investors Service in the current issue of its *Monthly Review and Outlook*. "This is roughly equal to 30 per cent of 1933 gross farm income."

Next in order will be banks, which will receive $1,830,000,000 and building, for which a total expenditure of $1,229,000,000 is contemplated. Retail trade will benefit indirectly from expenditures for practically all groups. These figures are exclusive of $1,166,000,000 in appropriations still to be made by Congress at this session.

Intrastate Commerce Not Under Codes, Court Rules

WASHINGTON — An immediate appeal to the Supreme Court will be taken by the Petroleum Administration Board on the ruling of a three-judge Federal Court in Texas that oil-refining companies which have not signed the code and which are engaged only in intrastate commerce are not subject to the Petroleum Code. The court also expressed doubts as to the validity of sections of the code affecting interstate transportation of oil.

The action of the Supreme Court on the case, assuming that it reaches that body, will be of outstanding importance to the whole NRA code program. In the automotive field the issue is of particular importance in connection with the approved automotive wholesale and motor vehicle retailing codes, the pending automotive maintenance code, and the approved trucking, bus and transit codes.

Rebuilders' Code to Be Heard March 1

WASHINGTON — Public hearing will be held March 1 on the code for the auto rebuilding and refinishing trade before Deputy Administrator K. J. Ammerman. The code was submitted by the Auto Rebuilders' Association of the United States, claiming to represent 75 per cent of the trade.

CALENDAR OF COMING EVENTS

AUTOMOBILE SHOWS

Des Moines, Ia.	Feb. 19-24
Evansville, Ind.	Feb. 20-24
Denver, Colo	Feb. 20-28
Peoria, Ill.	Feb. 21-25

FOREIGN SHOWS

Berlin	March 8-18
Geneva, Switzerland	March 16-25

MEETINGS

American Institute of Mining & Met. Engineers, New York City	Feb. 19-22
U. S. Chamber of Commerce, Washington	May 1-4

Chrysler Dealers Get Facts on Management

DETROIT—"Financial Facts for Chrysler Sales Corporation Dealers" is the title of a booklet just compiled by I. F. Schaeffer, the corporation's chief analyst, for the guidance of its dealers. The booklet sets up a procedure for determining capital requirements, giving standard figures, and shows how to analyse the operating statement. It also gives standard operating statements showing expenses in detail for dealers of various sizes and ratios of Chrysler to Plymouth sales. The standard operating statements provide for a net profit averaging around 3.8 per cent on the gross volume. Service and stockroom departments are budgeted to produce 10 per cent of gross income. The budgeted ratios of used to new car dollar volume ranges from 38 to 46 per cent.

The NHUC is "Regusted" Are You "Exprised?"

WASHINGTON—In an information service bulletin issued by the National Highway Users Conference, appears the following:

"In our mail from Mississippi comes a large cardboard placard headed, in two-inch letters, 'WE SHIP BY RAIL.' Following is the customary statement about the railroads paying taxes, maintaining schools and churches and building up the country.

"The surprising—no 'surprising' is not the word, because we have become accustomed to it—the discouraging part of this placard is that one of the firms listed as boosting for the railroads and against motor transportation is an auto parts company, and another firm is a service station selling a well known brand of gas and oil together with tires, tubes and accessories.

"If the members of our own family—the ones who are making their bread and butter out of motor transportation—are so thoroughly uneducated as to thus 'bite the hand that feeds them,' what a difficult task is before us!"

C. A. Vane Moves To California

PHILADELPHIA—C. A. Vane, for many years general manager of the National Automobile Dealers' Association and widely known in the industry, has taken up his residence in Sierra Madre, Cal., thus fulfilling a long cherished wish to live in the Golden State.

Stamping Company Takes New Name

Whitehead Stamping Company is the new name of the Kales Stamping Company, which was organized in 1904. Company officials state that the change of name in no way affects the policies of the company or the personnel.